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"Salvation of India lies in Cottages."

—*MAHATMA GANDHI*

DEMOCRACY OR DESTRUCTION

IF success of democracy is to be measured by the efficiency of its administration, contributing to happiness, contentment and advancement of the people, it may already be said to be a pronounced failure in this country. Eleven years of democratic rule may virtually be characterised as a period of all-round deterioration of public morals and administrative standards, culminating in the present chaotic conditions in moral, administrative and economic affairs of national life.

A large fraction of people's time and energy, which should have been harnessed for the development of the country is being wasted away in destructive criticism and in heaping curses on their own administration. The gulf that is already created between the people and the administration seems more or less unbridgeable and this unfortunate fact is largely at the root of many failures of governmental policies and their development plans. The deterioration that has taken place in the 'Law and Order' situation, rendering life and property insecure, has affected the psychology of the people to an alarming extent and has turned the people hostile and bitter against the so-called welfare administration.

Boon Of Democracy And Its Mis-use.

The greatest boon conferred by the democrative system of government adopted in this country after Independence is the introduction of 'universal adult franchise,' which gives right to the people to choose their own rulers and to make and unmake their own Governments. Obviously, the democratic form of Government had its birth and growth in the West and particularly in the U. K. and U. S. A. on whose model it is adopted in this country without taking into consideration the background, culture and political and intellectual development of the people.

A political system which has grown and flourished in some of the most advanced countries of the West could hardly be found suited to an undeveloped country like ours, where the people have just emerged from foreign rule of a thousand years, and where they basically lack political consciousness, qualities of patriotism, sense of duty and responsibility and above all spirit of sacrifice of individual interests for the higher interests of the nation. It is only natural that in the absence of proper environment and conditions a boon conferred on the people is being exploited by the selfish and opportunist section of politicians to their own advantage and to the detriment and ruin of the community as a whole. And it is this ugly spectacle of democracy with its concomitants of opportunism, irresponsibility, exploitation and worst of all immoral climate with which the people are confronted today.

Objects and Effects

The objects set by the democratic rule are most spectacular i. e. the establishment of Co-operative Commonwealth, Welfare State and a Socialistic Pattern of Society. It is dfficult to dispute these high objectives provided there are conditions in the country to fulfil them. We have, therefore, to examine what measures the democratic administration has taken during the last eleven years

and the results achieved towards the fulfilment of these objectives.

Co-operative Commonwealth

Co-operation and coordination in political, administrative and economic spheres of national life to promote speedy development of the country are the essence of this very laudable objective. As revealed by the All-India Co-operative Survey Committee's report, Co-operative Movement which has been in existence over half a century only covers 3% of our agricultural population and Co-operative Farming has hardly made any headway to develop the basic industry of the country. The record of the democratic administration to establish co-operative credit structure and to promote co-operative farming throughout the country during the period of its rule has been rather most insignificant if not disappointing.

The programme of coordination between the Centre and the States and between various Ministries and Departments of the same State has been a source of constant headache and complaints and the efforts of the administration to achieve it have been dismal failure. Absence of coordination in public administration and particularly in the implementation of the two plans and various development programmes has cost the nation most dearly and there has been appalling wastage of financial as well as human resources of the country. And, in place of success or achievement continued and repeated failures have dogged the steps of our democratic administration all these years.

The progress of the "Grow More Food" campaign and the 'Food Production Drive' which were launched on a war basis and on which enormous funds were wasted all these eleven years provided a typical instance of the failure of our democratic administration to meet the basic necessity of people's life. While the future of the country has been mortgaged in taking huge foreign loans to conduct the campaign, the problem of shortage of food has grown all the more acute creating an unlawful atmosphere for food raids and riots. The ugly scenes witnessed during food debate in the 'Lok Sabha' and particularly in the U. P. State Assembly during the current session, where the honourable members of the opposition who pleaded for the satisfactory solution of the food problem were dishonoured, assaulted, kicked and dragged on the floor of the Assembly by the police, speak volumes of the failure of democratic functioning of our administration. The shifting of responsibility from the Centre to the States and vice versa in the vital matter of providing food to the famished people is the height of irresponsibility that a democratic administration could conveniently afford to have.

Welfare State

It is rather adding insult to injury to call such a mis-rule by the grandiose name of a Welfare State, where people, due to the failure of the State, are compelled to take law into their own hands.

What is happening in Kerala and in some other States infested with decoit menace, killing and murders are the order of the day and the people are thrown at the mercy of lawless elements. In a State where indiscipline, Corruption. favouritism and nepotism are rampant and the people's life and property are insecure the very elements constituting the welfare of the people are obviously missing. Such a State may most justifiably be called a Chaotic State rather than a Welfare State.

Socialistic Pattern of Society

This innovation of 'Socialistic Pattern of Society' placed by the ruling party as its objective is something most incomprehensible. Nobody, not even its authors know, what exactly the new objective means in terms of evolving a new structure of society and how such a vague idea is likely to be worked out through administrative processes.

If it means levelling up of a section of the community which is disadvantageously placed at the low level economically and culturally, precious little seems to have been achieved by our democratic administration. But the process of levelling down of the well-placed and comparatively richer section of the society has gathered full momentum under the solgan of creating a classless society and our democratic administration has

almost become a synonymous term with taxation and nationalisation.

Ever increasing heavy burden of taxation has put a check on people's initiative and enterprise, made capital shy and scarce and encouraged the people to resort to illegal and improper ways of tax-evasion. The taxation policy of the administration may or may not have contributed to its sound finances but it has certainly contributed to the demoralisation of the society as a whole.

Will Democracy Survive ?

Judged by the standards of honest and efficient rule and the development of the people morally and materially, the record of the parliamentary democracy is a dismal failure in our country. All-round failure of the administration has made the people restless and has generated the spirit of revolt and lawlessness. That is a clear challenge to the survival of democracy in this country.

UNIVERSITIES IN ANCIENT INDIA

By : **B. G. NIKAM**

AS for as we know from the existing literature the History of Ancient Indian education extends from 2000 B. C. to 1200 A. D. From the point of education the period from 1200 A. D. to the eighteenth century can be called the medieval age. Socially and educationally, ancient India did not have the same phases throughout. They changed from time to time. These periods are, therefore, sub-divided as under :—

1. 2000 B. C. to 10000 B. C. :—the the Vedic Period
2. 1000 B. C. to 200 B. C. :—the Upanishadic Period.
3. 200 B. C. to 5000 A. D. :—the Dharmashastric Period.
4. 500 A. D. to 1200 A. D. :—the Pauranic period.

The Vedic Period :-During this period the society was very simple. Men and women had equal rights. Practically, every one was his own teacher, his own warrior, and his own farmer and agriculturist.

The Upanishadic Period :—During this period gradually society began to be divided into groups and this grouping started with Vedas. Round about 500 B. C. we began formulating the rules of writing. The Vedas were small in the beginning, but they were expanded as the ages rolled on.

The Dharmashastric Period :— This period saw a good deal of activities in respect of arts, literature, mathematics and dramatics. Sanskrit was a classical language, but Prakrit was the language of popular communication.

The Pauranic Period:-Really speaking, this period was the period of the Buddhists. So far education is concerned : universities of Nalanda and Vikramshila were Buddhistic institutions. The language was Pali. Institutional education began for the first time in Pauranic period.

Thus, in brief, our modern institutions can be compared with the Schools of ancient India. Any student who earnestly desired to be educated was never disappointed. Teachers did not hide deliberately technical knowledge from the students.

Shukracharya, the preceptor of Daityas taught to his bitterest enemy's son Kacha the art of reviving the dead. Drona, the famous archer, could not hide whatever he knew of the art of archery from Dhrastadyumna, inspite of the fact that he knew that this disciple would kill him one day.

The Guru and a pupil lived together. They had great affection for each other; rather their love was just like the love of father and son. The students used to live in the teacher's house, which was known as the Gurukul.

In the Gurukul, the student had to shun all comforts. He had to go to bed after the Guru and had to get up before him. He had to help the Guru in house-hold work, involving even menial duties at times. The life in the Gurukul was well

disciplined and at times very hard. From the point of view of needs, both teachers and the taught were satisfied. As the teacher did not live in luxury, he did not lead a life of want. The problem of indiscipline arose very rarely and since it was not frequent, punishments were not needed. There was a cord for all sorts of activities.

Liberal Education.

The education provided in the Universities like Taxshila, Nalanda, Vallabhi. Vikramashila, Jagadal, Nadiya and Ujjain was quite liberal. Students were provided with free boarding, lodging and clothing. There was generally a keen competition between the villages in giving their might for the village school, Beside this, they used to donate without hesitation at the time of social functions like marriage, Upanayanam, etc. The teacher not only provided knowledge to the students, but also raised funds from the villages for the benefit of the students. In time of crises, the Guru used to approach kings with a request to help the Gurukul. The Guru did not refuse to teach any student provided the student was fit to receive instruction.

The method of teaching was predominantly oral. It was not merely oral, but was individual also. Hearing, contemplation, and practice were the main features of this method. There were few books, the Vedas were not written. Every thing was learnt by heart. Their conviction was "If knowledge is in books, it is like money lent to others". At a time the Guru had fifteen to twenty students and only so much was taught at a time as a pupil could easily learn. Whatever was taught was learnt by the students on the same day. Unless the first lesson was fully learnt no further lesson was given. Sometimes older students were required to teach younger students.

The "Bell Lancaster System" the "Monitorial System" or the "Madras System" was copied by the Britishers from this country. The teachers taught older students at a fixed time a day, and then the older students taught the younger ones at some other time. It was possible as number of students and the number of subjects were less. In this way there was an apprenticeship.

Description of Universities

Our information regarding Nalanda comes from the Chinese pilgrim, Yuan Chwang, who toured India from 673 to 687 A. D. He stayed at Nalanda for ten years. He copied sacred Buddhist works. According to him, the place was known as Dharmaganj, situated seven miles south west of Bihar Sharif near Patna. The University had three big buildings knows as Ratna-sagar, Ratna-Dandi and Ratna-ranjak. Out of these, the middle one was nine storied building. In all there were eight halls, (each hall having dimensions of 200′ length and 150′ breadth) and 300 compartments. Walls of the building had 6' width. The building was attractive and magnificient in look. The building was surrounded on all sides with Mango grooves. There was a big and beautiful lake having clear and pure water in it. In the lake varieties of flowering plants were growing. Ten Crores of gold coins were spent over this building.

The library was housed in three different halls. Many lacs of books were present in the Library.

Messing was common. In every courtyard there was a well. Rooms were either single-seated or double-seated. Every student had stone, known as Chabutra, to sleep on. In every room there was a place for keeping lamps and books. There was good rush for admission. Not more than three out of ten succeeded in getting admission. Even then there were ten thousand students and 1500 teachers and it continued for more than eight or nine centuries, beginning from second century A. D. The institution was financed out of grants in the shape of lands. There were as many as 200 villages endowed by the Gupta Kings for the maintenance of University. Since it was Buddhistic Institution, the head was Monk and the teachers were Bhikshukas. Strangely enough, the study of Sanskrit was compulsory.

Vikramshila University was situated near Bhagalpur in Bilar. It was a congregation of many different colleges. In the centre there was a big hall. 3000 students and 100 teachers were in it. A third famous University was Taxshila. It was situated near Peshawar. Learned

diplomat, Chanakya, the minister of King Chandragupta, was the first teacher of this University. The teaching of medicine and science was the aim of this institution. The students were required to pay one thousand gold coins as a fee in advance. The poor students were offering their services to the teacher in lieu of this fee. The Taxshila University was at its zenith as regards medical studies even in the early centuries of Christian era. Similarly, the famous university of Ujjain had specialists of mathematics and astronomy and was famous for having established a great observatory. In Southern India, there was a famous educational centre at Kanchipuram.

An account of Vallabhi University is also found in the historical literature. It was in the Western part of India. Six thousand students were taking education in this Institution. Medicine and religion were taught in it. The Library of this University was very famous in those days. It was built during 11th and 12th centuries. Jagadal and Nadiya Universities were also famous in those days. Science, Logic and Darshanshatra were prominently taught in those institutions. Great poets like Jaydeo and Dhoi were teachers in those institutions.

Importance of the Universities

To Indian Universities students came from far-off lands like China, Tibet, Java, Sumatra, Korea, Greece, Iran and Arabia to quench their thirst for leaning. They stayed in the universities for more than ten years and specialised in logic, medicine and astronomy. It is quite obvious that the universities had a high standard. That is why students from foreign lands were attracted even when there were no facilities for travelling. The standard of these universities can be judged from the stay of the famous doctor, Jeevak (who attended on Emperors and whose fee was a figure of not less than eight digits) at Taxshila for seven years for specializing in medicine. Even after his long stay, when he left the University he thought that he was lacking in adequate knowledge of medicine. In those days theoretical knowledge had no value. The doctor with theoretical knowledge was regarded like an ass.

Practical training in pharmacy and surgery was insisted upon by legislative action before a doctor could set up a practice. Strabo, the Greek hostorian, has certified the fact that Indians were great physicians and they were specially good in curing snake-bites. Inexperienced candidates were given practice in surgery under the most experienced and specialized teachers. Only proficient surgeons were allowed to make operations of intestinal displacement, deep eranicle abscesses, cataract, hydrocele and removal of the still born child from the uterus. The patients were made insensitive to pain by an over dose of wine.

Not only human beings but even animals were given perfect medical aid. For the first time in the history of the world, Ashok, the Great, built, veterinary hospitals duly equipped with all necessary medicines. The names of great veterinary surgeons like Nakula and Sahdeva cannot be removed from the pages of history.

Similarly, ambulance cars were also utilized to remove the injured soldiers from the battle field. We do not find the name of any such conveyance in European history before the commencement of Crimean War. Not only this, even the services of Indian doctors like Manaka and others were requisitioned by Khalifa Harun-Al-Rashid of Baghdad when he was seriously confined to bed and Arab Physicians had lost all hopes of curing him. After recovery the Khalifa himself requested Manaka to stay with him and translate Ayurvedic works into Arabic. He also desired to call Indian lady doctors and midwives to write text books for his medical college.

Instances of life-long Brahmcharya were quite common in Nalanda. Magasthenes has quoted instances where Brahmins studied for as many as 48 years. They studied Logic, Vyakaran and philosophical subjects which are given importance today.

There were equal opportunities for all. There was no distinction between the rich and the poor. The princes and

peasants used to get the same kind of education from the same Guru. The pupilage of Drona, Drupada, and Sandipani Rishi are the best examples of this type.

To end, old education was free and broad-based. For up-keep of the Universities, donations and endowments were made by the foreign as well as native rulers liberally. The ultimate aim of education was the emancipation of the soul. 'Action is impotanct' was their belief. Imparting of education was considered as a great and pious service towards humanity. The teachers prayed for the glory of their students so that they might earn good name and fame for themselves as well as for their teachers wherever they went. The students of those institutions were highly honoured and valued in all parts of the world.

In brief, the education was not controlled by any external authority in ancient times. The teachers were free to teach whatever they chose and liked. They were the masters of the field of education.

LAND REFORM, TRUE AND FALSE

By: **Prof. M. A. VENKATA RAO**

THE zamindari system has been abolished by law i. e., by force. Though there is a case for such abolition of the artificial class of revenue collectors for Government (created by the British long ago as a convenience of administration in Northern India), there is none for the manner in which it was put through under the impulsion of ill-digested slogans. The guiding slogan was furnished by communist technique namely "*land to the tiller.*" The appeal of the cry derives plausibility because of the idea that there should be no middlemen, or at least unnecessary middlemen, between the cultivator and the State.

It is a question whether the class of zamindars was really one of unnecessary middlemen. However, the great harm that the measure did to the stability and progress of society flows from the blow it gave to the *institution* of *private property.* Socialism and communism are committed to the abolition of private property and it was in pursuance of socialism that the zamindari was abolished with inadequate compensation.

The basic idea of socialism namely the abolition of private property is inherently wrong. What is necessary for progress is only the *limitation* of private property to prevent monopoly and unjust use or non-use. If the zamindar was not able to cultivate all his lands or was unable to afford the capital necessary for improved methods of agriculture, all that was necessary was to create institutions like co-operative societies to make such facilities available. And, to help those who were able to cultivate land but were unable to obtain it on account of the paucity of such land open to purchase on the free market, the State could have imposed *ceilings* above which lands were to be sold compulsorily to peasant applicants *at the market rate.* Land mortgage banks could have paid spot cash to zamindars recovering it with a low rate of interest from the purchaser over a long period of time. This was the Danish way of redistribution of land. It was a civilised way without the destruction of property rights in *toto* and the destruction of a whole class.

Now we are approaching the second stage in this policy of vandalism ; again under the glamour of the same slogan of "land to the tiller". For, the abolition of the zamindari did not solve the land problem. It only substituted the State for the zamindar, which is no reform. In fact, it ushered in a new era of tyranny worse than the old, for the State is less easy to deal with by the cultivator than the old zamindar.

Today the State is committed to the fulfilment of the promise contained in

the slogan of land to the tiller. And since land is held over the greater part of the country by two classes of persons-absentee land owners and cultivating peasant-the cry of land to the tiller involves the abolition of the class of land owners. Now the land owners are quite different in regard to their status from zamindars. While the zamindar owed his rights over land to the State in return for the service of collecting land revenue, being only a tax from a farmer or contractor or licencee, the land owner in the ryotwari areas has acquired his rights on the contrary by fair purchase in the open market.

His are property rights acquired through cash purchase. The present policy of depriving him of his rights over his lands for the purpose of transferring them to the tenant at rates of compensation to be determined by the State stands on an altogether different footing from the policy of abolishing the zamindari. It amounts to *liquidation* of real *property* acquired legally in exchange for cash accumulated over the years through hard work, fair earning and thrifty savings.

People have to consider this proposal to liquidate the property of non-cultivating owners seriously and realise its economic and social implications before they permit the government to proceed with this supposed reform. They have to inquire whether there is not an *alternative* way of realising the objective of enabling tillers to own lands sufficient for profitable cultivation at higher levels of production.

We have to consider whether there is any justification for liquidation of the property rights of land-owners who have acquired them by purchase in the open market in favour of cultivators and tenants. Some tenants are proprietors in their own right for part of the lands they cultivate, while they are tenants in respect of other lands held by absentee or non-cultivating owners.

A class can be abolished with justice only if it is a parasite like that of beggars. Parasites perform no function but annex unfairly a share in the income earned by others. Many speculators in real estate and stocks and shares belong to this class of parasites. It should be considered whether landowners are comparable to this class of functionless exploiters.

Now socialism uses the term "exploitation" in a very wide sense to include the earnings of *all trade and industrial production.* Every form of economic exchange whether in commerce, capitalist production, transport, or agriculture except the wages of labour is considered to be "exploitation" by socialist thinkers. That is why they advocate the abolition of private property in any shape or form. But are we to accept this view of communism (Marxist socialism) at its face value, simply because the slogan "land to the tiller" is repeated *ad nauseum* and acquires the status of justice by the Goebbelsian salesmanship of the *Big Lie* shamelessly reiterated day in, day out, without any attempt at rational justification ?

But there is a genuine *justification* for the emergence and continued recognition of the class of land-owners. They may be middlemen between the cultivator and the State. But they perform a genuine economic and social function.

One such function is that of enabling landless cultivators to have the use of land (that they cannot purchase) on terms of crop sharing. The class of tenants is enabled to have the use of land with a share in the agricultural product without the responsibility of paying land revenue. There is here a *partnership* between capital and labour with the proceeds of farming divided between them in accordance with custom. It may be that the *proportion* of the share accruing to each of the partners needs revision. Usually the proportion is fifty fifty. Recently when he was chief minister Mr. C. Rajagopalachari revised it to *forty sixty* in Madras tilting the balance in favour of the tenant. Other measures like the provision of facilities-credit, cooperative marketing and purchase etc., can be provided through State assistance. Further, successful tenants may be enabled through State loans and land mortagage bank advances to *purchase land* in the neighbourhood from owners who have surplus lands. A ceiling can be fixed above which lands should be sold to applicants at market

rates if they wish to buy them. This was the Danish way.

But the present policy of taking land forcibly from the land owner and giving it to tenants and landless labourers at nominal rates amounting to ten or fifteen years revenue assessment has no justification whatever. It introduces vandalism as the foundation of the new socialistic pattern of society. And vandalism can never make for stability and progress. It creates the psychology of expecting *something for nothing* of the part of large sections of needy persons. It stimulates greed and gives it a coating of moral respectability. It popularises the false doctrine that all wealth is the result of unearned income and is tantamount to robbery. "All property is theft," said a socialist author (Prudhomme) and this is acted on seriously by our leaders today!

This is the product of ill-digested imitation of foreign ideas. There is a case for the taxation of *unearned income* whether from land or building or machine-using factory. This was proposed by Henry George. Today it has taken the shape of taxation of capital gains. Land revenue assessment is raised from time to time for the purpose of obtaining a share for the State in the unearned enhancement of land value flowing from the economic development of the country. To create a sense of confidence in the mind of the owner and to enable him to derive the benefits of capital investment, the interval is fixed at reasonably long periods. *Twenty years* of undisturbed possession and use have been found to be necessary to give a real chance to the owner to invest capital in improvements and to derive a reasonable income *on an average* over the period allowing for bad seasonal conditions and disasters like floods or drought. *Stability of tenure* for reasonable periods is a *sine qua non* of property in land and of progress through incentive.

There is another social function that is performed by land ownership. It is to provide an *avenue of secure investment* yielding a certain average level of income, particularly in food grains. Stability of property rights in land has historically provided an incentive to countless small businessmen, officials and others to save and invest in land. The hope of assuring for themselves and their children and dependents a safe form of income (chiefly in food grains) has helped many generations of people to plan their lives from a long term point of view. The possibility of having food assured for one's self and family has been a great moulder of character. It has helped people to subordinate the allurements of extravagant consumption to the necessary provision for old age and children till they come of age. A self-reliant class of householders who achieve *freedom from hunger* by their own efforts and savings without leave of bureaucrat, dictator or capitalist thus came into existence. Land investment has been an avenue of real freedom in the basic factors of food and provision for the future and has combined with investment in houses to produce a class thrifty, self-reliant, self-respecting citizens. This is surely the main aim of a republican society and if land-ownership secured through savings from genuine earnings over a life-time can assure this result, surely it is a consummation to be devoutly wished for and retained as the basic policy of a republican society and constitution.

The word "republic" in the name of communist States is a misnomer and a travesty of the truth. Real republicanism lives in independent or self-dependent citizens, who plan their own lives and carry them out without fear or favour. It is the duty of a republican State to create stable conditions of property and taxation to encourage such citizens to fulfil their own plans of life without unduly interfering with each other or depending on the State.

From this point of view, the preservation of the class of land-owners is indispensable. The slogan should not blind us to the need for the preservation of the class of peasant proprietors and landlords, with facilities for successful tenants to acquire land through fair purchase.

The right way to build a free economy and free society is to relate property to function. Such function includes individual self-fulfilment as well as social contribution.

OUR SUPREME FALLACY

By: **NAUTAMLAL C. TEJPAL**

TO be morally free, man must master his insticts and learn to rule his own spirit. Without self-discipline, we could not build character, nor accomplish anything of value.

Our plan for higher standard of living on the pattern of the Western life cannot go together with character building for our nation. After eleven years of independence, no one will claim that our moral standard has improved with the doubtful improvement of our material wellbeing.

Our plan is to pamper ourselves with more of luxuries, called the unnecessary necessities by the great humourist Mark Twain. We spend more for tobacco, tea, cinema, travel and education than at any other time. I say education, as the modern education is a costly luxury turning desk clerks out of manual workers. And as the aim of education is to make money, so the education has created class differences as wealth has done.

On one side we are made to believe that our First Five year Plan has been a success and has achieved more production while on the other we are asked to tighten our already tight belt for the sake of our future generations.

We want to imitate blindly the American pattern of life. The virgin land of North America is being robbed of its wealth at a very increasing speed; it has exhausted its iron ore, mineral oils and its fertility of land and have to import minerals from South America, Arabia and Africa to keep up its industry. We too have exhausted everything which was available on top of our land and on which we can easily lay our hands, such as agricultural and forest wealth.

Now we have not enough to export to pay for our huge imports. So we have started to dig underground for mineral wealth, and we are made to believe that at the end of 1958 we shall have plenty of iron and steel to export and earn the foreign exchange. Very soon with the modern machines and intensive exploitation we shall have spent our mineral wealth of coal, iron, mica etc., and the future generation for whom we are asked to tighten our belts will have inherited the land robbed of its fertility, its minerals and even most of our much eulogised river dams will have been silted.

In the great International Exhibition of last December at Delhi, there were imposing figures of the achievements of our First Five Year Plan written in huge letters and strangely enough it also showed the figure of unemployment which was higher than at any other time. Our Plans will increase our material production no doubt but they cannot create more happiness for the masses.

Gandhiji was not an ignorant yokel, who knew nothing about the good things offered easily and cheaply by the modern means of production. But he wanted to discipline our manhood by self-conquest. He had chosen between the two freedoms: the false, where one is free to indulge in modern craze for more of everything—cheaply and easily—and the true, where he is free to do what he ought.

Back in 1925, when I first went to Cairo, considered as the Paris of Africa, I used to go for evening walks with friends to the famous Rue Emal el Din, lined with Casinos and dance halls with inviting lights and attractive pictures

outside the halls. We would see the programmes and pictures stuck up outside. Some of the programmes would attract us, and my friends would purchase the tickets and go in to enjoy-each paying for himself was a rule among ourselves. No matter how inclination and friends tried to pull me in, I would return back alone to my quarters.

I had gone to Cairo to earn my bread; my big family at home had great expectations from me. My father had lost almost everything in the big crash of the Bombay share market. My mother had to grind labouriously the grain and had to fetch water from far off well every day, a few annas could have been enough to save this back breaking labour to my–not too strong mother. So how can I spend the precious annas in enjoying the films and dances. Though I was only in my teens, and having no control of a guardian to see after me in the far off land and though earning for myself and suffered jears from my friends; yet for the first five years of my life in gey Cairo I had never seen the inside of the dance halls or cinemas.

No doubt there was conflict in my mind, but after a time it ceased. My wish and my will became one. Money was hard to make, so it was spent very cautiously. But if andwhen the money is made easily, the easy spending also starts simultaniously. For contrast I give another experience :—

A family of milkman lives in my neighbourhood. They eat the poorest of food, but even the female members do not miss any of the cinema films showing in the town. When the film is particularly good some of the members see the same more than once, and to cover the cost of extra shows, we get more quota of water in our milk. Money made easily, simply by adding water to the milk, goes easily for harmful enjoyments.

We all have some habitual weaknesses; perhaps we smoke too much, take tea or drink too much, spend money and time in cinema; but to build up the strength of character we must tame ourselves for self-denial. The salvation of our sorely troubled land lies not in harnessing and taming rivers, these are secondary matters. We shall never know true freedom and happiness until we tame ourselves and harness our man power. Nothing can describe the sense of power and contentment which is the fruit of the hard won victory over our own spirit.

Our supreme fallacy is the belief that the more we have, the happier we shall be; that the fullest enrichment of our lives can come from abundance of possession.

Today in this push-button age of easy living self-denial has become entirely meaningless. Tempted by the advantages provided by the modern science, we have betrayed the spirit of our great man—Mahatma Gandhi. We are now preached to lose the power 'to do without'. And worst of all, we assume, as our birth-right that we need never do without ; and this is the reason which ushers in bloody revolutions and wars.

Building of huge power and irrigation projects and new industrial units based on the economic and technological patterns envolved by the west, have brought social and moral problems which Gandhiji wanted to avoid by his programme of village development by small-scale industries. But our present rulers are leading us to the opposite direction. When our background is polluted by the slogans for higher standard of living and the prevailing idea is "How can I enjoy myself", there is no hope for our country, or cottage industries.

In the whole history of our country we have not heard of deaths due to lack

of clothing, but millions are dying of starvation. If our textile mills are closed immediately, non will die of exposure. But everyone will start producing his own requirement of cloth as one produces and cooks the food for himself.

The latest model of Spinning Charkha with 8 spindles and paddle drive can easily decentralize the textile industry and lead the people to simple living and clear the cities of their slums and immoral living.

Our material well-being may or may not go up, but it is quite certain that our moral standard is fast going down, thanks to the spending spree in the name of planning. Dharma has become old fashioned. "Progress" has taken its place. This will end into a tragedy for the values of Indian life.

"CAPITAL FORMATION AND CO-OPERATIVE FARMING".

By: **A. N. RAJAMANI.**

WE have marched through times of individual salvation and social segregation. We currently sojourn in an age of unification and collective outlook. We have beaten to a mummy the sense of glory and prestige attached to individual chivalry. We are out for fostering national spirit, with global endeavour for elevation of mankind as a whole in fields material and moral. We have petrified the privacy of the bygone age in family, friendship and association, largely by the prying eyes and arms of the government in every department of human activity. We have magnificently replaced the thesis of individual betterment under competitive conditions by the plan—consciousness impregnated by the systematic species. In short, we have come upon decades dotted with camps and groups, isms and ideologies-all converging under the shadow of corporate action. Especially in Bharat, reputed for its congeries of colourful kingdoms always at loggerheads, we see today the dawn of democracy, unity and co-operation, sustained by the triangular coordinates of party, power and people.

Emergence of the concept of co-operation

This explains the emergence and environments of the concept of co-operative commonwealth, formulated years back by the Congress Party. Its substance was the coordination of national developmental activities, with the aura of co-operation, under the awn and assistance of the omnipotent Central Goverment. But finding some centrifugal forces here and there, the Congress changed its raiments in favour of the suit of socialistic pattern of society. Even here its vital fluid runs through the veins of co-operation. The change was obviously effected to galvanize the public opinion. Indeed, at the moment, co-operation appears to have come to stay for good. Its reverberation through this land of lengths and breadths, will dispel any doubts on this point. Surely, the word, 'Co-operation', has become a by-word for popularity!

Application of the principle of co-operation

It is against this background, that one has to study and ponder over the application of the principle of co-operation in farming operation. It is recommended as a safe and sound remedy to remove all malady in agriculture. It is even considered as providing the essential backbone for rural regeneration. This is the reason

why, so many delegations have been sent abroad in the recent past, to study the working of co-operative farming societies therein, so as to draft their noteworthy features for incorporation in India.

Need for consideration prior to action

But before reaching any final decision on this vital matter affecting the millions of our rural population, it is imperative to consider the different ways by which capital formation—which is but the essence of arguments on the economics of co-operative farming—can be brought about to an adequate measure; for the underlying assumption behind its suggested organization on a large scale, is the expected manifold increase in capital formation, which alone can help the nation —making it fend for itself—to forge ahead in the comity of nations, with rapid industrialization, so as to secure an even keel for the Indian economy. Hence, an exploration into the possibility of increased production under co-operative farming, will irradiate on the feasibility of its attainment to an abundant measure and also will facilitate identification of the elements acting as accelerators therefor.

Lines of co-operation

In a farming society, the line of co-operation takes the course mainly of pooling of land, pooling of capital and pooling of manpower. Among these three agencies of production—to the exclusion, of course, of organization, which will be taken up later—save for the first, the others can be adjusted, that is, they can be increased or decreased to fulfil the requirements for their economic usage with best advantage. In this sense, these two agencies can be characterized as elastic.

Land

But the first agency, namely land, its supply is fixed. In other words, it cannot follow-up any wide adjustments in the other agencies—rather they are to run behind this—unless there are culturable wastes available and acreage that could be reclaimed at a reasonable cost. However, there can be marginal adjustment, by way of an increase in the total acreage under the plough immediately, by reason of the removal of common boundaries which existed previously in the fragmented and scattered agricultural holdings. But there is an assumption here that the lands under the framing society are a contiguous compact block. Therefore, the cost of cultivation of the marginal lands, the capacity of the lands to pay back suitably the capital investments made and the efficiency of managerial perambulations, would collectively tell upon the volume of capital formation.

Capital and charges thereon

The integrated capital may be in different forms: (i) capital goods: viz. implements, transport vehicles, buildings -warehousing, etc. (ii) capital as such: funds. (iii) capital installations: wells, irrigation canals etc. (iv) capital in the form of draught animals: livestock, and (v) capital in the shape of fertilizers, seeds, other forms of manure etc. These may broadly be categorized under long run and short run capital. But all these do not imply capital formation as they are, in view of the so many charges contained in increased agricultural production. Firstly, allowance will have to be made for the proper maintenance of capital goods. Secondly, a certain portion of it will have to be released as payment for use in favour of the owners (on the understanding that ownership is retained by the farming members). Thirdly, depreciation will have to be provide for. Fourthly, a reserve fund will have to be built-up to answer any calls of emergency (say, failure of monsoon). Lastly, some proportion of it must

be set apart for improvement of agriculture. After all these have been fulfilled, regular savings (both for the farming society as a whole, and for the individual members in their private capacity after their consumption needs are satisfied) will take place. Hence, capital formation is dependent on the initial volume of the capital integration and the size of the charges on them. Even the way these charges are cleared, as for instance, in cash or share certificates redeemable after a stipulated period, either negotiable or not, will affect it.

Manpower

The third agency, namely, the pooling of manpower, bristles with difficulties. This is so because the human element is immanent in any consideration of its disposal. Introduction of mechanization, in spite of its many advantages, will throw out many hands. Further, adoption of a policy of rationalization will enlarge the dimensions of the problem of surplus labour. The magnitude of the problem of gainfully employing all of them is certainly stupendous, for its solution is conditional upon the development of other sectors of the economy, with sufficient employment potential, matching the annual flow of the surplus labour. This reminds us of the brilliant exposition of the problem and the solution for capital formation and its promotion, enunciated by Professor Nurkse. Even though academically his is a magnificient analysis, yet the scope for its translation in action in India seems very limited, especially because the rural mass are yet to learn the art of living–to change their philosophy in life–and to conceptualize the idea of sacrifice for betterment.

Accelerators

The element of accelerator of capital formation can be found in each of these three agencies. With regard to land, it has its incarnation in increased production, which is subject to factors such as the monsoon, the lands being under the non-influence of the Law of Diminishing Returns, the society availing itself of the technological advancements and taking to improved methods of cultivation. To rename these, 'Better Farming,' must be the order in the society. As regards the other capital resources, their best combination-determined by research into the soil fertility etc.-will pave the way for their better and economic utilization, controlling the stature of the net capital procreation. As for manpower, a better search for the talented, and their greater and more concrete exhibition of their working capacity, will make possible additions to capital formation. These elements can be grouped as positive accelerators.

The group of negative accelerators consists of pulling down the consumption level of the members to the barest minimum, consistent with keeping the soul and body intact, and of adopting family planning to keep down the total volume of consumption. But the creation of circumstances conductive to the promotion of the operation of these negative accelerators, is indeed difficult of realization more so in a democracy wherein co-operative farming is intended to flower, on the basis of voluntary association, in the freest sense of the term. The feasibility of its realization is rendered all the more flimsy because the trend in the co-operative farming society will be for the consumption rate to go up, owing to the workers having not been fully active before and their now being fully engaged in physical exertion. Therefore, unless the government forces down consumption to a stated level and rigorously maintains it, this negative accelerator may not have any sphere of action. As for the other item under

this negative group, namely, family planning, it is essentially a long-term project, the morality of which is an issue of heated controversy now-a--days. Besides, the fact, that the farmers now earn more than before, would foretell the possibility of a further proliferation of the farming population. It is, therefore, for all practical purposes, a non-effective negative accelerator.

However, the negative accelerator in the form of a complete appropriation of the rural marketable surplus, for the purpose of investment elsewhere-despite its definite advantages of increased monetization-should imply state control, exercised either through compulsory purchase of the food and commercial grains at a low price on a large scale or through heavy taxation, and it being either way tantamount to collective farming in the cloak of co-operative farming, would result in effecting an unhappy disarrangement in the psychological framework of the farmers, there by lowering production and nullifying the effects of other catalytic measures, which the government or the farming society may employ for toning up capital formation.

Auxiliary Contributory Factors

At any rate, the scope for increased capital formation, seems to be widened due to the following auxillary factors:- (i) the economics of large scale; (ii) government assistance by way of credit, marketing, soil research etc. and (iii) increased employment opportunities. But all these are only in the nature of incidentals, whose contribution for accretion to capital formation, will not be as much as it would be by the fundamentals discussed earlier. This is occasioned by their full scope for action being qualified by the relative price fluctuations affecting the agricultural products and wage structure (on the supposition that wage is as a rule tendered in cash), as compared with the industrial raw materials or other consumption goods, by the pecuniary circumstances of the government and by the efficiency and ability of the farmers and other workers to do the type of other works open in the village.

Rural Leadership

There is also another agency to be reckoned with, namely, organization, which was adverted to earlier. The execution of the various works related to farming and other village needs, is directly related to the nature of leadership obtaining in the society and in the village. In other words, rural leadership influences indirectly the entire structure of rural capital formation and through it, therefore, that of the co-operative farming society too. This is so because it is only the overall guidance, direction and control, which will effectively canalise the resources of the society in such a way, as between different avenues and combinations of employment of resources, that it will yield the maximum return possible.

Scope for Intensive Cultivation

An important point to note here is the fact that in India, the lands have been under cultivation for centuries on end. The scope for extensive cultivation is also limited now on account of every inch of arable land having been cashed already. The alternative is only intensive cultivation based on : (i) the non-exhaustion of soil fertility and frequent application of manures to reimburse the yearly depletion, and (ii) a fuller use of manpower. With regard to the former, nothing can be said with any certainty. Any pronouncement should be preceded by an exhaustive enquiry in different plots of land. With regard to the latter,

although theoretically the available surplus labour can be put on intensive cultivation, yet there may not be associated with it the element of personal attention–for it may not occur in farming society that one is cultivating one's own holding, or even if it is so, not necessarily the same acreage since the individual holding may differ in size from the average holding allotted by the society for tilling purpose—with the result, despite a given volume of investment of capital in the shape of manpower, the level of production may not be pushed up *pro-rata*, even assuming that Nature is extremely co-operative. The net result will be, that even the existing volume of production may be blown out. In such a case, capital formation in a co-operative farming society undergoes the peril of emaciation.

Probability of success

When we discuss the question of the probability of success in achieving the goal of increased capital formation, we must bear in mind a social phenomenon. In addition to the absence of consolidated rural leadership in the present day, it is now increasingly evidenced that the younger generation of agriculturists, who were erstwhile collegues of their elders in farming operations, take to academic life and consider it *infra dig* to return back to their paternal holdings. The old people who remain on the farm, rendered immobile due to sociological and physical factors, could hardly put in more work on land. We must thank our stars if they maintain a part of their previous vigour in work. From this point of view, the possibility for incrcase of production in a farming society is not foreseeable. Indeed, in another decade, when this last hard-working and toiling generation on land passes away, there may not be sufficient men left out to look after cultivation operations and the government may have perforce to resort to mechanization.

The foregoing discussion leaves us with misgivings about the growth of capital formation as the co-operative farming society gets going. However, the soundness of any proposition, that capital formation would definitely be pitched high, when the co-operative farming society goes in full swing, could rest only on the understanding that the positive accelerators play their role in a somewhat conscientious way. This is from the point of pure economics. But very often this does not happen. Even in some of the foremost States in India, where co-operation has had a certain measure of success such as Bombay, Madras and Punjab, capital formation in the co-operative farming societies has not been satisfactory. In foreign countries too, it has not had any spectacular success. But in Communist countries, it appears, that only the negative accelerators set at work ruthlessly, have been able to help the concerned countries to march ahead of other democratic countries in the rate of progress recorded – if their claims in this regard are to be honoured and accepted.

Psychological Framework

The factor that causes this phenomenon of reduced capital formation, can be traced to the psychological discordance of the farmers with the society. Their individual entity in the garb of social prestige attached to owning land—which is yet to be demolished by the current of modern thoughts of co-operative endeavour to be projected behind every piece of national activity—stands supreme. Therefore, unless they are thoroughly activised by a sense of patriotism, unless an orientation takes place in their approach to socio-economic problems, unless their entire thought and life structure is supercharged with

the beneficial ideas of co-operation, unless a sense of detachment for a nobler cause of the common weal possesses them, it should be pretty hard for a farming society to march under the Law of Success. After all, it must be remembered that it is only on the bed-rock of social psychology that many a farming society in the foreign countries has floundered.

Conclusion

As a matter of fact, by merely farming a society on the basis of co-operation, neither lands nor the capital resources undergo any metamorphosis; nor any divine afflatus descends on men. There is bound to be working in it the contumacious forces of sentiment and prestige, and the emotional dichotomy of love and hate. The gregariousness of men is perhaps located only in separatism and get-away-ness! No unified mankind sprouts out once the lands are swept into co-operative farming society, thanks to the percolation in rural areas of very many political, communal and regional ideas. Therefore, it is only an inner urge in everyone to work selflessly assimilating fully the import of the inimitable statement of our beloved Prime Minister, that, 'The present generation is sentenced to hard labour'—and the eclat of the rural mass as a whole with an insatiable hunger for progress, that can deliver the desideratum of the hour—abundant capital formation in co-operative farming societies. Probably only time can work this up in our masses.

EIGHT YEARS OF PLANNING BUT NO ADEQUATE FOOD.

By: **S. KRISHNA.**

FOOD has often been described as the Achille's Heel of the Indian economy. And rightly too, for in spite of its predominantly agrarian bias, the economy of our country has since long suffered from food shortages. Sometimes, when Nature turns angry, the uneasy equilibrium between the increasing demand and diminishing supply suffers an abrupt jolt plunging the country into nightmares of famines and pestilence. At others, when the monsoons are up to expectation (and not more) the shortage assume their normal proportions, which too often necessitate recourse to abnormal methods to guard against their adverse repercussions.

But natural calamities alone do not account for the chronic deficit from which our agriculture suffers. There are other countries too which receive the same treatment from Nature. But their agriculture does not so very often suffers jolts of the same intensity as ours. After all, it is not merely a matter of chance or gamble that in spite of periodic floods, sometimes much more devastating than ours, the agricultural sector in China seldom fails to deliver the required amount of food grains not only for the sustenance of a growing Chinese population but also to pay for goods essential for country's development.

Defective System Of Agriculture

It is thus clear that our system of agriculture is defective. No doubt, India is basically an agricultural country and the bulk of her population is engaged in agricultural pursuits, still agriculture in

India is a 'depressed industry' because the relative income in the agricultural sector is far less than those in the non-agricultural sectors. The total produce of the land is too small to provide a decent living to the entire agricultural population. This disquieting feature in our agricultural economy is a legacy of the past and is the cumulative effect of a host of factors like low rates of yield per acre; dependence on the freaks of monsoons; increasing pressure of farm population on land; primitive tillage methods; lack of improved seeds and adequate manuring system; soil exhaustion; antiquated land-system; fragmentation of holdings; uncertain conditions of tenancy; exploitation of the cultivator by moneylenders etc. In short, low productive efficiency and the basic weakness in the agrarian structure tend to reduce agriculture to a 'deficit economy'. The position was succinctly described by Shri A. P. Jain at a conference of the FAO last year.

> "More than three-forth of our land under crops does not enjoy the benefits of irrigation. More than two-third of the population is dependent on farming and the per capita availability of agricultural land is 0·97 acre and in some parts it is as low as 0·51 acre. A vast majority of our farmers still continues to follow primitive methods. The average per acre yield of rice, wheat, cotton and sugarcane is one of the lowest in the world ... No doubt, some of the progressive farmers have achieved production comparable to the best in the world, but the overwhelming majority of the poor farmers is making a low yield. In the result, our averages are low and many of our rural folk live on the verge of subsistence".

Growing Population

Apart from this there exists the problem of our ever-increasing population which adds another 5 million mouths to feed every year, and further heighten the gravity of the problem. No doubt, Mr. Colin Clark, an Australian economist of international repute in an article contributed to the 1953 Annual number of 'Capital' helpedto scatter much of the Neo-malthusian gloominess that clouded our thinking on the possibilities of this nation making economic headway (even inspite of its rapid population growth) certain amount of fear still looms large on this land of ours because despite of our best efforts we have not been able to equate demand and supply of food in India with the result that the observation of Malthus that 'there is a tendency in all animated life to increase beyond the nourishment prepared for it' holds good in the prevailing conditions in India.

Divergent Views

Now there is one section of public opinion in India which believes that there is real food scarcity in India. According to them the present malady is the outcome of improper distribution of food-grains partly due to transport bottlenecks and partly due to the ineffecient administrative machinery. Thus it often happens that while in some parts of the country plenty of foodgrains are available, others suffer from starvation.

Lest we forget, the partition of the country in 1947 made the situation still worse for India which comprised 82 percent of the total population but only 75 percent of the total cereal production of undivided India. Partition resulted in a loss of 7 to 8 lakhs tons of food-grains, 9 lakhs of cotton and 50 lakh bales of jute. The refusal of Pakistan to devalue her currency during 1949 made her goods costlier by 44 percent for India and imports from that country were virtually stopped. *India had to*

increase her production of cotton and jute and this was to some extent at the cost of food-grains. The prices of oil-seeds and other commercial crops like sugarcane were more favourable than those of food-grains and so the farmers diverted a part of their holdings from food crops to the more remunerative cash crops. All these factors have reduced production.

Many suggestions have been advanced from time to time to solve India's food problem. Essentially they all boil down to one or other or both, of two lines of approach-short-term and long-term. The former entails procurement from surplus area, rationing, imports, price controls, subsidies, supply of foodgrains to deficit areas at controlled price etc., while the latter calls for increased production.

Without doubt we have pursued this policy right from 1941, and yet failed to shorten the gap between India's large and ever-increasing population on the one hand and its deficient and not-so-fast-increasing food-supply on the other. Why then, we need following the same old lines? In the short run, the problem can be tackled with imports, check on hoarding and gearing-up and expansion of distributive machinery. The Ashoka Mehta Committee have done a right thing when they envisage the need for importing 2 to 3 million tons of food grains per annum during the next few years, and at the same time suggest that the Government should socialise part of the wholesale trade, exercise control over traders' operation in the rest of the market through a system of licensing and even introduce, should need arise, limited compulsory procurement. This would help us tide over our present difficulties.

Food production, in the long run, can be increased both by extensive and intensive cultivation. It has been estimated that there are as many as 69.2 million acres of fallow land and another 60 millions of cultivable waste in the country. Even if we could put to use only about 75 million acres of this 130 million uncultivated land, we could get another 16 to 17 million tons of food-grains.

Addressing the 6 th meeting of Nationl Development Council Standing Committee, Prime Minister Nehru said:" We should increase it (food Production) mainly through intensive methods... Intensive methods should be applied where water is available, where either irrigation is available or there is assured rainfall. Such areas amount to 100 million acres in the country and an increase in production of 50 to 60 percent should be secured there during the plan. This concentrated, intensive work can only be done by individual approach, by horticultural methods as it were, like the methods they use in Japan and China.

Implementation of Land Reforms

Another important factor which may really speed up food production is the Speedy Implementation of Land Reform Programme. No doubt, the abolition of intermediaries has been accomplished almost throughout the country, much remains to be done in respect of broadly agreed policies for the regulation of rents, conferring security of tenure upon tenants, enforcement of ceilings on land and other measures for improving the social and economic position of the tilleres of the soil. The Planning Commission's policy in this regard is well-known. Yet it has not been fully implemented. This is certainly an obstacle in the way of rapid agricultural progress.

If, therefore, we want to create the right atmosphere for more purposeful

agricultural activity, then tenants must be protected from ejectment and the so-called 'voluntary surrenders'. Besides, they must be made owners of non-resumable areas on payment of compensation in easy instalments. Similarly, ceilings on holdings should be fixed at the earliest and programme of their consolidation be completed. So long as uncertainty reigns in this sphere, we cannot expect the farmers to devote their undivided energy to production. Land reforms have, therefore, become inevitable and must be expedited. Without them it may not be possible to bring about the necessary psychological and material change among the peasants for intensifying food production.

Co-operative Farming

Future prospects of our food production also depend very much upon co-operative Farming which indeed is the best method of rationalising agriculture. The Planning Commission as well as spokesmen of the Government have expressed themselves in favour of the same. In its June 1957 session, the AICC too recommended the extension of the co-operative method to the largest extent. But there is still a good deal of hesitancy in many quarters in this regard and many State Governments have been lukewarm in promoting this programme with the result that the progress of co-operative farming has been painfully slow in the country. Nevertheless, it will be pertinent to stress that from the long term point of view India's food production will very much depend upon this much-needed revolution in her agrarian structure.

And last but not the least while long-term measures for increasing the production of staple food crops continue, attempts should also be made for imposing a check on our rapidly increasing numbers. As the Ashoka Mehta Committee Report says: "For an effective solution of the food problem, not only determined and all-out efforts to step up production have to be made, but the high rate of increase of population has to be checked. We, therefore, urge that a nation-wide campaign for family planning enlisting the efforts and energies of social workers particularly women, medical men, scientists, sociologists, economists, administrators and political leaders be launched". Unless this be done, all our endeavours in the direction of making India self-sufficient in food would prove futile".

Our Planners should note that during the First Plan period institutional changes in agriculture were not forceful enough and as a result of this though the theoretical structure of comprehensive agricultural planning was well laid out in the files of the Planning Commission, it could not be put into practice. What is of immediate necessity in the field of agricultural planning is an effective rapid transformation of the social structure into an institutional framework which would considerably increase agricultural productivity.

CEILING ON AGRICULTURAL HOLDINGS BILL OF ANDHRA PRADESH

By: **GOPAL RAO EKBOTE**

THE Government of Andhra Pradesh has published the ceiling on agricultural holdings Bill in the official gazette for the purpose of eliciting public opinion. As the Bill postulates a social and economic transformation and is inevitably linked with serious political implications, it is but natural that the Bill should evoke a careful, cautious and critical analysis. Mr. J. G. Maddox the expert in agrarian economic problems has clearly laid down the principles and set the goals for formulating an agrarian policy in the following words.

"There are always four stages which are consciously or unconsciously taken by the policy maker. He sets up his ideal or objective. Second, he takes an inventory of the existing situations. Third, he measures or visualises the difference between the existing situation and his ideal. Fourth he chooses a course of action to bring the existing situation to the ideal which he has set."

As far as the setting up of ideal and objective is concerned, Indian National Congress and naturally the Centre and the State Governments in India, immediately after the achievement of independence laid down in clear and unequivocal terms, "that the State shall strive to promote the welfare of the people by securing a social order in which justice, social, economic and political, shall inform all the institutions of the national life and shall so direct their policies which would secure the distribution of material resources of the community in the best interest of the people and that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment". This translated in the context of land reforms means that all measures should be directed to remove the disparity in holding and redistribute the land to peasant proprietors and the settlement of landless farmers. This of course has to be achieved keeping in view the supreme necessity of increase in the food and other agricultural production.

To take effective steps to this end, adequate data was found to be necessary. For this purpose a census of land-holdings was initiated some time ago. This census has now been carried out. There are other sources also through which it could now be said that reliable information concerning the distribution and size of holdings is available. There is no difference of opinion in regard to the enormous disparity existing in the rural economy. It has also become clear that there is a long way to cover between the existing situation and the ideal prescribed.

The question of the abolition of intermediary rights like zamindari and jagirdari and other types of landlordism has been satisfactorily solved in the period of the First five year plan. This could legitimately be claimed as a major and proud achievement towards the desired end. In the interest of society as a whole the effort now is to be directed to bring about a transformation in such a way as will help reconcile conflicting interests within the agrarian economy, remove the disparities which now exist and provide a social and economic frame work for the balanced growth of the rural community.

Thus the stage has been set for the fourth phase of the land reform legislation. This phase focusses attention on

the elimination of absentee landlordism and on the establishment of peasant proprietors with a ceiling on holdings. It is only by this that we will be able to bring about new social values and provide incentives to the peasants to improve the system of agriculture. This is possible only if peasant has a sense of ownership. Peasant proprietorship is the best compromise between socialism and communism by allowing ownership of land to the tiller who labours hard for his own well-being. The transition to this stage will be peaceful unlike the violence attached to the socialistic changes brought about by compulsory expropriation with the attendant evils. It is not only a material revolution but also a psychological revolution which will change the whole fabric of rural thinking and living.

The term land reform covers a variety of different policies. But there are at least six basic principles which must be observed if land reforms are to be made on progressive lines. 1. ownership and cultivation should not be divorced and land must be held by those who till it. 2. All the intermediaries and feudal interests between the actual tiller and the State are to be done away with. 3. Fixation of maximum and minimum limits to the size of holdings and compulsory adjustment of those found to be above or below the sizes. 4. Establishment of family farms and encouragement of organised "co-operatives" in all chief processes of farming; 5. Extension of cultivation and increase in productivity of land and 6. Generally levelling up of inequalities in land-ownership and distribution of wealth and ensuring to the rural community a minimum living in conformity with certain well-conceived social standards.

Apart from these basic questions there are few other aspects of the land reforms which cannot be lost sight of until the peasants are made the proprietors of the land and during such period when some concessions are given to weaker section of society to lease out the land, it becomes necessary to regulate the rent and give security of tenure. It is also necessary to take effective steps to stop large scale eviction of tillers and tenants in view of the impending measure of land reforms.

It is only in the light of what has been stated above that the Bill under consideration will have to be critically discussed. It is obvious from the title of the Bill itself that it covers only the question of fixation of ceiling on bolh present as well as future holdings. The Government has declared its intention of bringing forward a Bill for amending the Tenancy Act of Hyderabad with a view to removing certain difficulties and to validate certain illegal alienations in Telangana area. The Government have also decided to undertake unified tenancy legislation for the whole State in replacement of certain provisions of the Hyderabad Tenancy Act and the Andhra Tenancy Aet. The Government is also contemplating to extend the Hyderabad Prevention of fragmentation and consolidation of holdings Act 1956 to the Andhra area. A comprehensive legislation on Bhooden and Gramdan is said to be under consideration of the Government.

It is thus clear that the Government appears to be in a mood to tackle the problem of land reforms in a piecemeal manner. How far this is advantageous is difficult to state but one thing is clear that the rural community will have to remain in a state of suspension until the whole piclure is presented. It would have brought stability to the rural community if this question of land reforms has been tackled in a comprehensive manner simultaneously in all its aspects.

The Hyderabad Tenancy Act is considered to be a right step and is surely a forward measure. This act defines the family holding and fixes the present and future holding to the land yielding an income of Rs. 3,600 per annum. This Act has also taken into consideration the defects in fixing the holding exclusively in view of the gross income arrived at on the basis of average of the prices prevailing during the past few years. It therefore fixed the acreage also. There is at present no ceiling on holdings in Andhra area. The question therefore is, as to whether the ceiling fixed in Telengana area under the Hyderabad Tenancy Act should be applied to the Andhra or a new ceiling with a new method of fixing the same is to be adopted for the whole State. The second alternative will naturally affect the settled question as far as Telengana is concerned. It is bound to disturb the relations of the landlord and tenant and is likely to give rise to many problems in Telangana.

This apart the real question is as to what should be the ceiling on the present and future holdings. Fixation of maximum limit to the holding which a family should own and cultivate has been discussed for a long time, and it is difficult to arrive at an unanimous conclusion on such a question. The general view appears to be that this maximum area should be so fixed which will provide opportunity to a cultivator's family for a decent standard of living. The maximum as suggested by our planners in the Second Five Year Plan is in terms of family holding. This maximum is suggest- to vary from 3 to 6 such family holdings depending upon the number of members in a family. For an average family of five members the planners envisage the maximum holding of land which would yield a net income of Rs. 3,600 a year.

One of the principles usually adopted in determining the ceiling is that a holding should not be much bigger than what a family can cultivate with the help of the family labour, and hired labour only now and then. It seems unjust on the very face of it to let one person a holding being cultivated with the help of a number of hired labourers and others having so small a holding which cannot utilise fully even the family labour, and there being many who are landless.

While fixing a ceiling it is however necessary to see that the existing production does not fall. On the other hand, it should increase the efficiency of agriculture in relation to output. The planning commission has approved of certain special concessions and excluded certain catagories of farms from the purview of ceilings. In view of this it was expected that the ceiling in Andhra Pradesh would not be fixed beyond a net income of Rs. 3,600/- per year, but the Bill raises it to Rs. 5,400.

In fact the ceiling is Rs. 7,200 in as much as a separate provision in the Bill permits a person to hold or acquire land exclusively used for grazing upto a limit of 1/3 of the maximum holding in addtion to the maximum extent of land that he is entitled to hold or acquire. This provision will come handy to all the landholders for raising the ceiling to Rs. 7,200/-. In addition to this in the case of a joint Hindu Family consisting of more than five members entitled to a share in the property, every additional member will get a land whose net income would be Rs. 1,200 if the family is in excess of five members. If these provisions are read together and if the procedure prescribed in the Bill for the determination of net income of holding is understood in the present context of administration,

the very concept of land reforms gets frustrated.

As we are wedded to a socialistic type of Society, we have to definitely go the socialist way in land legislation. The Government has decided that land belongs to those who work it. It is therefore, unnecessary to emphasise the necessity of building up of a powerful peasant class by eradicating economic inequalities which is deemed so essential for social and economic equality. The disparities which are quite obvious in the provision of the Bill, will have to be eliminated. The discrimination made between the Sugar Factories started on or before June 1950 and those started subsequently does not seem to have any economic basis. Similarly there is no reason why the lands on which orchards are raised the gross income should be estimated with reference to the average annual gross yield which such lands would have yielded, had they been cultivated with ordinary crops. It only means the perpetuation of disparity. One can understand if the orchards were exempted if they constitute reasonably compact areas in the light of the suggestion given by the planning Commission. But if they are to be brought within the purview of the ceiling the validity and justification for such discrimination become doubtful.

The fixation of ceiling on the basis of income itself is discriminatory to some extent between the efficient agriculturists whose yield is more from a given piece of land and an idle and useless agriculturist who has an insignificent income from the same piece of land. The fixation of holdings in such cases will naturally be discriminatory. It would only mean that those who are efficient farmers will be hit more than the inefficient farmers. This hardly can be the intention of land reforms. The Bill has not made any provision to remove this possible discrimination. In view of what had been stated earlier, it would have been comparatively better if the system and quantum of holding adopted in Hyderabad Tenancy Act had been extended to the Andhra area.

It is not understood as to why the Government has thought it advisable to provide two different ways for imposing ceiling on future acquisitions. The Bill in the first instance declares that the Government will notify a date and until that date any person would be entitled to purchase or acquire any land, the total assessment payable in respect of all lands held by him after such acquisition or purchase however should not exceed Rs. 250/-. This assessment does not include water cess, land cess, education tax or any penal assessment imposed. After this notified date is expired no person will be entitled to purchase or acquire any land such that the total land held by him after such purchase would exceed 2/3 of the permissible holding. This provision opens a new door for those who may not be agriculturists to purchase or acquire land and deprive the tenants or land labour working on the land. Thus, in all, there would be 3 categories of persons holding distinctly 3 categories of holdings, a situation which goes contrary to the removal of disparity. This could be avoided in the interests of farmers.

In determining the compensation, the Bill does not seem to have taken into consideration, the directions given in the Second Five Year Plan.

There is no indication in the Bill as to what policy the Government intends to adopt in regard to the settlement of lands acquired in consequence of the application on ceiling. As it is there is very

little hope of getting surplus land in view of the liberal fixation of ceilings on present holdings. The ordinance asking land holders to declare their holdings had already alerted them with the result that large scale partitions and transfers have already taken place. It is not correct to state that assumption of surplus land is not the aim of land legislation.

The plan very rightly lays down the lines along which the structure of rural economy is proposed to be reorganised. Co-operatives and village panchayats are considered to be the principal institutions through which such reorganisation is to be carried out as part of national planning. The pattern of organisation to be aimed at has been expressed as co-operative village management. The ceiling according to the Bill shall not apply to co-operative farming societies *approved by the Government*. Why this possible discrimination and a room for mal-administration is kept in the Bill is beyond one's comprehension. When the co-operative farming societies are all approved under the Co-operative Societies Act and when the immediate ideal is to build up co-operative farming, then why the discretion is retained to approve or disapprove of these societies with the Government is ununderstandable.

The Government of India has planned to set up 6000 co-operative farming societies in the 2nd Five year plan. Some attempt in this direction has already been made in the past but the result is not so inspiring. In fact there is a section in the society which is sceptical about the success of the co-operative farming societies in India. The responsibility of those who believe in the co-operative farming societies thus become more and it is expected that it will be discharged only when substantial encouragement is given to these co-operatives. The Bill is definitely discouraging from this point of view.

Examined critically the Bill purporting to introduce the measure, which was overdue since long, seems in a way unspectacular. But judged properly in the context of the semi-feudal set up of our rural economy, the Government has made a beginning and therefore its significance cannot be under-estimated.

The government of Andhra Pradesh deserves appreciation for embarking upon the legislation for fixing the ceiling in the Andhra area which definitely is a step forward. The present atmosphere however requires a radical change in the Bill, a change which will bring the peasant proprietors nearer to our goal.

A GLANCE INTO THE PIPLI DEVELOPMENT BLOCK

By: **D. TRIPATHY**

The Block.

The Pipli Davelopment Block in the district of Puri in Orissa was started in April 54 as a N. E. S. Block. Initially its area was co-extensive with that of the Pipli Police Thana. It covered an area of 81 sq. miles. It had a population of 58547 distributed in 202 villages small and big. After 2½ years of working it was transformed into a C. D. Block in Oct. 56. It was at this stage that some changes in its boundary were made. Some villages of the Block were transferred to other nearby Blocks and some villages from the nearby areas were tagged to this Block. As a result there was some change in the area, population

and number of villages of the Block.. The total number of villages increased to 224 and the total population to nearly 62000. The area of the Block is no longer co-extensive with that of the Pipli Thana. It now covers a major part of the Pipli Thana and part of the Delang Thana. The first survey was conducted in the beginning of the N. E. S. phase. But since then, even after one and half years of the completion of the N. E. S. phase and boundary changes, no survey is complete. In the absence of up-to-date data, it is very difficult to make an accurate assessment of the achievements and to arrive at correct and accurate conclusions.

Panchayats

With the transformation from the N.E.S. to the C.D. phase, the entire Block was organised into 13 Gramapanchayats, not in existence till then. The division of the Block into these Panchayats was made on the basis of population so as to make them equal units of population. In addition to population, due consideration should also have been given to economic, social and cultural ties, similarity of customs and conventions between different villages and even distribution of resources between different panchayats. This would have made the panchayats more uniform and integrated units. Election is already complete in ten panchayats and election cases of three others are pending in the High Court. Each panchayat area is placed under a V.L.W. for execution of the Community Development programme.

Staff

The staff of the Block consists of the B.D.O., one Agriculture Extension Officer, one Co-operative Extension Officer, two Overseers, two Social Education Organisers-one male and another female, 13 Grama Sevakas, two Grama Sevikas, One Compost Inspector, one Medical Officer, one Health Inspector, one Lady Health Visitor, four Midwives eight Stock-men and the office staff.

Special Problem

The Block has certain special problems of its own which have a great bearing on the development programme. The success of the development programme depends in a large measure on the solution of these problems.

1. The Block is a very thickly populated area, density of population being 730 per Sq. mile, much above the average even for the coastal division of Orissa (474). The per capita distribution of land is very low being about 0.8 acres. Thus the pressure of population on land is very high. There is very little scope for increasing agricultural output by extensive methods of cultivation. For nearly 90% of the total area has already been brought under the plough. The only hope for agricultural output, therefore, lies in intensive methods of cultivation. Unfortunately, however, incentive for cultivating the same piece of land with the application of more capital, fertiliser, improved seeds and better methods of cultivation on a long term basis, is very low. The Block consists of many ex-Zamindari areas. Although the Zamindari system has already been abolished, its associated evil, namely Bhag Chas is still holding a strong sway over the people. In certain parts of the Block, the produce of the land is shared between the Land-lord and the tenant-cultivator in the proportion of 50% to 50%, and in certain other parts, in the proportion of 40% and 60%. The number of tenant-cultivator seems to be relatively larger, so much so that certain villages are entirely owned by zamindars. The incentive to bring about permanant improvement in the land is, therefore, found in the least, and until this incentive is raised

in sufficient heights any programme of agricultural development would remain as a mere paper scheme. The prospect of agricultural development on a permanent basis is closely bound up with the degree of encouragement given to ownership cultivation.

2. The block is situated in a low level and a part of it was being affected by floods in the past. But with the completion of the Hirakud Dam project, the area has been partially deprived of its natural and traditional source of water and fertilisers supply. Hence the need for artificial irrigation and application of artificial fertilisers to the field is great. No part of the area has yet been provided with irrigation facilities. The area comes under the Mahanadi Delta Irrigation Scheme which will take some years to materialise since survey work has just started. In order to avoid duplication of work, the Block administration has completely left out irrigation. The result has been continuous crop failure for the last two years bringing misery and destitution for the people. Agriculture in the area, has as such, become a gamble in the monsoons. Some sort of co-ordination should immediately be effected between the programme of Block administration and of the Delta Irrigation Scheme and irrigation facilities be provided as early as practicable.

The low level of the land and the floods have rendered the cost of construction and cost of maintenance of roads very high, by warranting heavy annual repair and construction of a large number of costly culverts. Hence the system of communication is not well developed in the Block.

3. Each village in the Block has some collective property. This idea of collective property augurs well for the attainment of a co-operative commonwealth. But the property is not properly managed owing to group rivalry.

4. Villages are large in number. But with a few exceptions are usually small in size. They are closely situated. This is evident from the fact that on an average, there are nearly three villages in one square mile of area and the average population of a village comes to 277. In certain cases, even five to ten families make a village. But jealousy amongst different villages and even parts of the same village is very keen. Village politics has torn each and every village, big and small, into small fragments, water tight compartments indeed. This is obvious from the fact that three out of 13 Panchayat Election cases are pending in the High Court. Village politics and group rivalry deter all attempts at co-operative efforts for community development. It has affected and influenced all organisations in the block.

5. There appears to be a glaring concentration of wealth in the hands of a few and majority of population lead a poor and pathetic life.

Development

1. Agriculture:—More than 80% of the population of the area is directly engaged in agricultural pursuits. It is therefore but natural that priority should be given to agricultural developments in the Community Development Programme. The high lights of the Agricultural Development Programme are introduction of Japanese Method of cultivation, supply of fertilisers, supply of green manure seeds, compost making, supply of improved seeds, plant protection measures, supply of grafts and seedlings, the school orchard scheme, and land reclamation.

The Japanese Method of cultivation has been more or less adopted all over the Block on a limited scale. It is pro-

ducing good results and the people have already realised the superiority of the method. But the area of operation has not appreciably increased owing to paucity of funds in the hands of the cultivators, consequent upon the continuous drought for the last two years and small and scattered holdings. Drill and broad-casting are usual methods of paddy cultivation. The use of transplantation method is very limited.

The fertilisers supplied include Ammonia Sulphate, Super Phosphate and Bone meal. The use of Ammonia Sulphate and Bone meals is widespread all over the Block. But nowhere in the Block, people have yet realised the utility of Super Phosphate and hence its use is very little. This calls for immediate organised efforts for convincing the people about the utility of Super Phosphate to Agriculture and the harmful effects of too much use of Ammonia Sulphate alone.

Use of green manure seeds is an age old practice.

Compost pits are found in almost all villages of the Block. But compost making has nowhere developed on scientific lines. Cow dung is still being used primarily as domestic fuel. Re-afforestation scheme may therefore be taken up for the supply of fuel in order to release cow dung, a very valuable source of manure to be used in the fields.

Supply of fruit grafts and seedlings and school orchard schemes have been recently introduced. The result is yet to be assessed.

The major cash crops of the area are cocoanut, betal nut, betel, Polang Oil seeds, banana and potato, Major part of the fertiliser is consumed in the cultivation of patato. In many cases, cocoanut and betel nut orchards have a wild growth.

Progress of land reclamation is very slow and the response is poor owing to high cost. There is little scope for extensive cultivation.

Ground work for the agricultural development had already been made by the Agricultural Department much before the establishment of the Block. Only recently, the village leaders' training camps are being organised to educate the farmers on improved and scientific methods of farming.

Progress in Agriculture has not been appreciated, because water is the primary need of agriculture. Unfortunately in the Block there is complete absence of irrigation facilities of any kind, and agriculture is entirely dependent on erratic and seasonal rainfall. The soil of the Block is very fertile and the mother earth will produce gold indeed, if she is properly nourished and fed. Agriculture all over the Block is primarily carried on for subsistence as opposed to commercial farming.

2. Animal Husbandry:- Any scheme of agricultural development is closely associated with animal husbandry. An intensive scheme for cattle and poultry development has been adopted by the Animal Husbandry and Veterinary Department. A key village Block of the Veterinary Department covers only 65 villages of the Block. The Veterinary Dispensary and seven out of eight Stockmen centres are situated within the key village Block to render intensive service As such, the remaining 159 villages of the Block are served by only one Stockman centre. The service is therefore, inadequate and poor in a major part of the block. Opening of a few stockman centres, if not veterinary dispensaries, is an imperative felt need of the people.

Artificial insemination of cattle by bringing semen from Bangalore by a plane to

Bhubaneswar and therefrom by a special jeep to the centres is being done with a good measure of success. The scheme is producing healthy and better calves and is growing in popularity. The problem is one of supplying sufficient fodder to the cattle population when pressure of population on land is very high.

A fairly large poultry farm has been started at Pipli for popularising poultry farming. The demand for chickens and birds is increasing very fast. There is an urgent need for expansion of the size of the present farm and opening of a few more farms in the interior to attain still greater progress.

3. Water supply and sanitation:— The Block comes under the National Drinking Water supply and Sanitation Scheme. It is therefore but natural that by now the position of Drinking Water Supply should be relatively satisfactory here. Since the inception of the Block, 185 tube wells and 168 ring wells have either already been constructed or are under construction. To achieve the target of one well for 30 families, 100 additional wells need be constructed within the coming one and half years of the C. D. phase. The pressing problems of drinking water supply in the area, although not yet solved in its entirety, has undoubtedly been solved to a great extent.

In the matter of rural sanitation, however, excepting the construction of a few latrines here and there, no other significant advance has been made. Villages remain as filthy as before.

Although the problem of drinking water supply has been solved to a large extent, owing to the special scheme, the problem of bathing water supply, still remains untouched., and is very acute and pressing indeed. The small stagnant pools dry up in the hot summer and compel people in most villages to go without a proper bath. Bathing water for man and cattle is a greater felt need of the people than roads. And the feeling is that the labour employed in the construction of mud roads should have first been directed towards construction of a number of big tanks to ensure water supply throughout the year. It is only very recently that the irrigation grant has been diverted towards pisciculture to serve the multiple purpose of water supply, malaria control, and pisciculture. The scheme is yet to be materialised. This alone cannot solve the problem.

4. *Communication*:–The Block is poorly served by good roads owing to high cost of construction and maintenance consequent upon floods and low level of lands as has been explained earlier. There are only three good roads including the Jagannath Trunk Road. A good number of mud roads have been constructed recently to connect Panchayat Headquarters and other important centres with the main roads. The demand for communication has been greatly met in six of the Panchayats and work is in progress in two more. Due to want of annual repairs some of these village roads have already been damaged and owing to want of culverts, a good number of them including two roads leading to Panchayat Headquarters of Popranga and Nua Sasan are of no benefit. There is no sense in constructing culverts on interior village roads when roads connecting Panchayat Headquarters and important marketing centres are going without the same. This is neither in keeping with the Master Plan nor a proper fixation of the order of priority. Most of the mud roads become unpassable in the rainy season when the demand for the good roads is the greatest.

5. *Co-operation*:—Prior to the formation of the Block, there were 40 small

credit societies in the area. After the formation of the block, they were integrated and consolidated into a few large sized co-operatives. At present, there is one large sized credit society or grain gola in each Panchayat area to meet with the credit needs of the cultivators. On an enquiry from all section of the people, it is found that the co-operatives are not working satisfactorily. Not a single man, not even some of the Directors expressed satisfaction over the working of the co-operatives. 25% of the loans advanced is outstanding, and the societies are unable to recover the loans promptly. From casual conversation with the members and directors as to the reasons of unsatisfactory working of the co-operatives, it is gathered that they are two folds. First, the Directorate of the Societies is virtually nominated by the Officers of the Co-operative Department and therefore, the Directorate loses its representative character, responsibilities and influence. In certain cases, even Board meetings are postponed from time to time due to want of a quorum. Secondly, the agricultural loans are not supplied in time. Consequently, instead of being used for the agricultural improvements they are consumed for unproductive purposes. The cultivator therefore finds difficulties in repaying the loan. The solution lies in making the Directorate a representative body of members, fixing up greater responsibilities on the Directors and supplying of funds in time for agricultural improvements by obtaining advance loans from the central bank or the State Bank as the case may be. If necessary, suitable amendments may be made in the Co-operative Societies Act and also in the 'Loans & Advances' rules of the co-operative banks.

There are two multi-purpose co-operative societies in the Block, the working of which is not satisfactory.

6. *Cottage Industry*:—About cottage industries the lesser is said the better it is. Progress in this field is very slow. Excepting the setting up of a handful of industrial co-operatives, and five Amber Charkha centres very recently, no other effort appears to have been made for development of cottage industries. There are one tile-cum-soap-making society, one coir society, one oilmen society, one weavers' society, and rural house-building society started very recently. The oilmen society is not functioning owing to internal conflict, and the house-building society is yet to start funçtioning. Very recently five Amber Charka centres have been opened to train a batch of 50 women in the art of spinning and the scheme has made a good beginning. Palm-gur making is also carried on a limited scale. A few selected candidates have been given stipends for being trained in village crafts.

People evince keen interest to develop cottage industries, if they are supplied with technical know-how, knowledge, and marketing facilities. There is good scope for development of coir rope-making and foot-brush-making, chik-making, sun-shade-making, hand-fan making, mat-making, oil-crushing, weaving, tile making, carpentry and pottery etc. These can be carried on in each village, even in each home providing gainful employment to women-at-home and men-at-their leisure.

7. *Health*:-The area is served by one dispensary of the District Board and a Primary Health Centre with three maternity sub-centres. The preventive and curative aspects have been combined at present owing to want of sufficient staff. Anti-cholera inoculations and anti-pox vaccinations are beings given from time to time. Expectant mothers and newly born babies are attended by the midwives who find themselves quite

busy. Some improvement in the pre- and post-delivery care has been noticed. Expectants are supplied with milk-powder and multi-vitamin tablets free of cost in limited quantities.

The free-milk-distribution scheme and mid-day meal supply to school children has also been introduced. Rice e. t. c. are being collected from the children themselves-a sort of levy-for the supply of mid-day meals.

The low level of land and high floods have created a large number of water pools which serve as the breeding ground of mosquitos, carriers of malaria and filaria germs. The area is highly malaria and filaria infected. No concrete measures have so far been taken by the Block Administration for controlling the diseases. The pisciculture scheme, if succeeds, will solve the problemm to a limited extent only. Of course, there has been supply of D. D. T., e. t. c. for use in limited quantities. But prevention is always better than cure and is highly desirable.

8. *Education:*—In the Block area there are 72 Primary schools, some of which have not yet started functioning, 4 M. E. Schools and only one High School. Thus there is only one primary school for every 900 persons in the area and the number is found inadequate. The Teishipur Gramapanchayat, for example, has only one Primary School for its 5000 population. 52 new schools need be started by the end of the Second Five Year Plan period to attain the target of one Primory School for every 500 persons. But the B.D.O. does not expect more than twenty new schools to be complete within the period.

There are 24 adult education centres including three meant for females. But owing to the insufficiency of the period of the terms (six months only) they do not turn out tangible results.

There are a good number of community reading centres but some of them are not being made good use of. Some of them have been reduced to godowns and some others to class rooms for school boys. Eight Panchayat Headquarters have already been supplied with community listeners sets and two others are to get soon. But very few people do listen to community programmes.

Library movement is not widespread. Number of libraries organised is very few and found inadequate. Lack of funds has been the main difficulty in this direction.

9. *Rural Housing* :—Houses rather huts in the area are mostly built of mud and thatch. The roofs are susceptible to fire. Ventilation facilities in the houses except in Brahmin houses to some extent are conspicuously lacking. Betel nut and cocoanut trees growing all around the houses, prevent free flow of air.

The rural housing scheme of the Block has not made much headway. So far roofs of 30 schools have been provided with fire proof materials. This also saves the cost of annual repairs. The amount of loan given to an individual for construction of a new house according to an approved plan or for renovation of the roofs with fire proof materials is found quite inadequate. The amount of loan granted for individuals being 1,500/- and Rs. 1,000/- respectively. Hence, the scheme has not been very much popular.

10. *Youth Movement*:—Youth clubs are coming and going, better no mention be made of them. The children organisations in certain cases are doing a good work in fostering the sense of service and sacrifice to duty and responsility and a community feeling amongst small children.

But in most cases, they are inactive and in a moribund condition.

There is practically no organisation amongst students to infuse the idea of service and sacrifice for the society into them. Boy scouts, Social Service Guilds and Girl Guides may be organised amonst them to render social services.

On being asked by the Government to furnish a list of Mahila Samities in the Block, only recently five of them were organised overnight. But all of them have no more than nominal paper existence.

Organisation of Melas, fairs and shows for providing periodical meetings and discussion grounds and education centres to villagers for creating a sense of unity, commonness and a community feeling amongst them are not frequently resorted to.

General:—In any Community Development Programme, the V. L. W. is the key man. On his efficiency depends the success or otherwise of the scheme. In order to act as the friend, Philosopher and guide of the people, he must at least make himself familiar if not anything else with the people in the area. There are some V. L. Ws who by dint of their friendly attitude, and devotion to duty, have earned the appreciation and respect of the people. Special mention in this connection may be made of the V. L. Ws of Jasuapur G. P., Saraswatipur G. P. and Danda Mukundapur G. P. In particular the V. L. W of Jasuapur G. P. an energetic young man, has made himself so familiar with all young and old, male and female, rich and poor, that he is taken as an important member of each and every family in his area. The V. L. W. of Govindapur G. P. although a new entrant, seems to be a seasoned worker and he is making right approach.

In striking constrast, there are some other V. L. Ws, who by their unfriendly and unsympathetic attitude, have made themselves quite unpopular and incurred the displeasure and wrath of the people. So much so, that in certain cases, people prefer to go without them.

Among a section of the V. L. Ws, there is pessimism. They are oblivious of their future prospect and have developed an attitude of continuing in their jobs not by rendering the best service that they can, but by pleasing the authority by hook or by crook. Some of them are not even paying regular visits to the villages in their areas and some of them even after staying for more than a year, have not gone to all villages in their respective areas.

Generally speaking, people of the area are quite amenable to reason. They evince keen interest to understand new ideas and put them into practice when it is put to them in a simple and proper way. Brahmin villages and Harijan Basties are generally neat and clean. Organisation and leadership are usually stronger in Brahmin villages. To the south of pipli, people usually make a good response to an appeal made by organised and well informed non-official agencies and to the north of Pipli, people are more responsive to official appeals.

Excepting a few, members in general, did not evince much interest in the proceedings of the Block Advisory Committee meeting. The discussions are virtually confined to the President, the Vice-President and the Secretary of the committee.

To sum up, the Community Development Programme has been accepted by the people as their own. Nothing would be farther from the truth than to say that the people's co-operation is not forthcoming for the implementation of the

programme. If it is not forthcoming, it is because, in certain cases, people have been scared in the mass either by a wrong approach or by fixation of the order of priority not in accordance with their felt needs or because of false and irresponsible promises made and not fulfilled, as a result of which, there has been great frustration amongst the people and a loss of confidence in the sincerity and the success of the progamme. In fact, people are ready to lend their co-operation provided a proper approach is made to them. For enlisting their full co-operation, for the successful implementation, of the various schemes in the programme, the important points are; properly feeling the pulse of the people, fixation of the order of priority, in accordance with the felt needs of the people and making a proper approach to the people. A proper understanding of the various implications of the Community Development Programme, requires a high standard of education which our people lack in. We cannot expect the standard of an American or a University graduate from our villagers. Of necessity, therefore, we have to make repeated approaches and try all persuasive methods about the utility of the various schemes of the Community Development Programme and their role in the same.

In the Block, the attainment of the fundamental objective of the Community Development Programme, the creation of the urge for a better living and providing the means for the same, the setting up of the machinery of progress in motion is a long way still. What is needed most is a more intensive drive. Side by side, with the implementation of the development schemes, greater attention should be given to the spread of education-general, social and technical.

FERTILIZER IN AGRICULTURE EXTENSION

By: **N. M. CHATURVEDI**

With the growing need of population, food production has got a great importance today. Our country is passing through the crucial stage of Democracy. A new experiment has been set up which is performed by National Extension Service and Community Development.

Additional Food By Fertilizer.

Greatest problem before the workers of Community Development and National Extension Service is, how to produce more. Some yard-sticks have been evolved for the additional food production. Fertilizers play a very important role in the production of food materials.

It has been established that:-

1 Ton of Ammonium Sulphate Produces 1·6 tons of more food.
1 ,, ,, Ammonium Sulphate Nitrate ,, 2 ,, ,, ,, ,,
1 ,, ,, Urea ,, 3·6 ,, ,, ,, ,,
1 ,, ,, Super Phos. ,, 1 ,, ,, ,, ,,
1 ,, ,, Bone meal ,, 1 ,, ,, ,, ,,
and 1 ,, ,, Caster Cake can produce 0·5 tons of additional food. By other means additional food production is done 1 to 2·5 tons only. It has been seen that Fertilizer can increase the food production 0·5 ton to 3·6. tons more than other sources.

In our country a plant has been established at Sindri to produce Ammonium Sulphate. The factory can produce 1000 tons of fertilizers per day.

Target For Fertilizers

The target for consumption of different fertilizer as stated by R. L. M. Ghose ets. in his book 'Rice in India' was fixed for the 2nd Five Year Plan.

Target for consumption of different plant nutrients (tons) are as follows:—

Year.	Nitrogen	Phosphetic acid	potash
1956-57	195000	50000	12000
1957-58	247000	60000	15000
1958-59	312000	60000	20000
1959-60	390000	100000	25000
1960-61	480000	120000	30000

In the race of production, Extension Workers are stepping very fast. Through demonstrations and extension the name and importance of the fertilizers has reached the darkest corner of the village. With the pace of development the demand is increasing like anything. Our factories are not able to produce to our requirements. The actual preduction in the country for different years for sulphate of Ammonia and Super Phosphate are as follows :—

Year.	Sulphate of Ammonia	Super Phosphate.
1952	220,301 tons	46,650 tens
1953	319,616 ,,	46,294 ,,
1954	340,222 ,,	105,056 ,,

The meet the demand of the cultivators other fertilizers are also being popularised. Urea and Ammonium Sulphate Nitrate are also gaining ground.

Use of Fertilizers

Ammonium Sulphate and Super Thosphate are being used extensively. Mostly the cultivators think that the production will be more with the increased doze of fertilizers. This fertilizer is used in two ways.

(I) Basal dressing
(II) Top dressing

Basal dressing is done before the crop is sown and top dressing is done after the crop is sown and at the flowering stage, when the requirement of the Nutrient is greater. Top dressing is always done in

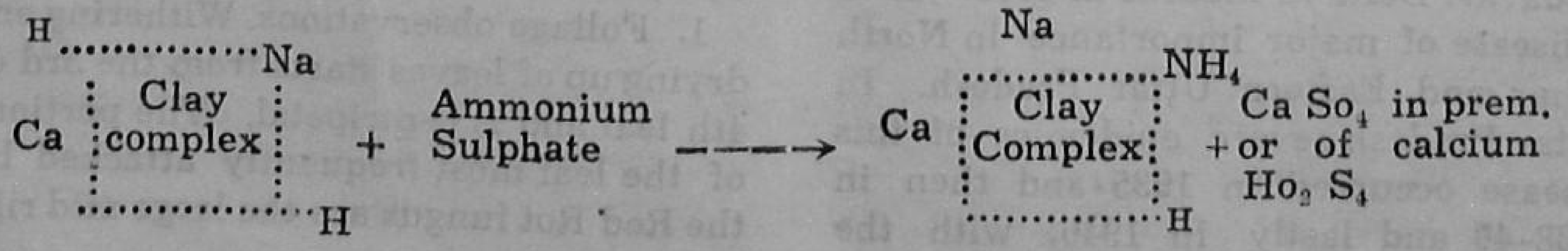
(a) Presence of water
(b) With irrigation water.

In wheat generally irrigation is done after dressing.

Reaction of Ammonium Sulphate

When the fertilizer is used in more dozes than required, crop generally lodge. Leaves become extended and ploffy. Sometimes the fertilizer causes Plasmolysis. When this is used on a plant in absence of water the crystal soak water from the leaves and cells of the leaves rupture.

Ammonia is generally used by the plants. Plant takes their nitrogenous requirement either in the form of Ammonia or Nitrate. Ammonia and Nitrate both can enter in the clay complex as base exchange. Generally in absence of Calcium and Potassium Hy drogen is replaced. Hydrogen forms Sulphuric acid causing acidity in the soil.



Soil reaction must be known before the use of this fertilizer. This fertilizer should not be used in an acid soil where there is Calcium it can easily be used.

Nutrients in this fertilizer are readily available. One should be very careful before its use. It is used at the requirement of the crop.

Other Nitrogenous Fertilizer

Urea and Ammonium Sulphate Nitrate is also being used in the fields. The use of these fertilizers are not so popular as Ammonium Sulphate. Supply of nutrients in these fertilizers are much more than in the sulphate of Ammonia. No harmful affect is produced from Urea. Sometimes the use of Ammonium Sulphate Nitrate is harmful as a top dressing fertilizer at the flowering stage of the crop due to the production of different gases from it.

Super Phosphate

The use of Phosphatic fertilizers are mere technical than the nitrogeneous one. Sometimes the Phosphate in the soil is changed in such a form which is not available to the plants. The process is called Phosphate fixation. In that case it renders other nutrients unavailable as well.

Process of Phosphetic Fixation

Mechanism of phosphate fixation by clay minerals may be represented by the following reaction.

$$AL(H_2O)3 \begin{cases} (OH) \\ (OH) \\ (OH) \end{cases} + H_2PO_4 \rightleftarrows AL(H_2O)3 \begin{cases} (OH) \\ (OH) \\ (OH) \end{cases}$$

(OH) groups are replaced by Phospate. This phosphate becomes unavailable to the plants. Best way for using these fertilizers will be using it in the root zone of the plants. This fertilizer is used before sowing the crop in the fields.

Fertilizers, no doubt, are helpful for the additional food production, but it reacts in opposite direction when proper care is not taken. Extension worker should popularise it with technical knowledge and proper manner. Only then it will serve its purpose in true sense.

RED ROT DISEASE IN SUGARCANE

By : **S. K. CHOPRA**

THERE are about 24 different diseases which are found attacking the sugarcane crop in India. Of all the diseases that affect sugarcane, Red Rot due to Colletotrichum falcatum went is most destructive. It was first described by Went in Java in 1893.

In India it was first recorded in Godavari Delta in Madras in 1902. It is a disease of major importance in North Bihar and Eastern Uttar Pradesh. In Uttar Pradesh severe epidemics of this disease occurred in 1935 and then in 1938-40 and lastly in 1946, with the result that some very popular and promising varieties were thrown out of cultivation and it threatened the very existence of sugar industry in the above crisis producing epidemics.

The symptoms, causes and control measures etc. of this important disease are presented below :—

Symptoms

1. Foliage observations. Withering and drying up of leaves starts from the 3rd or 4th leaf and is centripetal. The portions of the leaf most frequently attacked by the Red Rot fungus are the large mid ribs

and the leaf sheaths. On the mid rib the disease appears first as small red spots on the upper surface. These develop rapidly in both directions. Frequently a large portion of the upper surface of the mid rib becomes affected. While an individual lesion may be very much elongated, the long lesions which are commonly present usually result from the coalescence of smaller ones. A spot is bright red first but later fades out to a whitish or greyish colour at the centre, and this portion becomes covered with the black fruiting pustules of the fungus. Affected leaf sheaths also assume a reddish colour which gradually fades out to a straw colour.

2. Stem observations. In the stems the infection is as a rule internal and external examination may not reveal the presence of disease. When the stems are completely rotted within, the rind loses its naturally bright colour, becomes dull in appearance and shrinks at the nodes. Split open a suspicious-looking cane in July or August and look for the longitudinal reddening of the tissues with scattered white patches running transversely across the red blotches usually towards the base. The affected cane tissue also emits a distinct sour smell. In advanced stages of the disease, drying of cane and longitudinal wrinkling of the rind occur. The fruiting bodies of the fungus appear on the shrivelled up rind as black dots.

Appearance of the disease

On the leaf mid ribs, the red blotches appear during May and June, producing maximum sporulation during July and August. First symptoms on the canes are noticed towards the end of July or early August and the maximum damage is caused in October. In short, Red Rot is observed from August onward.

Causes

(a) Cultivation of highly susceptible varieties is mostly responsible for Red Rot epidemics. (b) Planting of diseased cane setts. (c) Ratooning in highly infested soils. (d) Irregular and heavy rains are favourable for quick dispersal and spread of the disease.

Losses caused by Red Rot

According to Chona and Padwich the disease caused an "Almost complete devastation of thousands of cane fields of the predominant commercial variety Co. 213 in the affected tracts" reducing the production to about one-third to one half. Losses to the sugarcane crop from Red Rot result in several ways: Killing of leaf tissues, death of plants or the tops of plants, reduction of sucrose in the juice and reduction in stands in the fields. Edgerrton in 1911 estimated that there was reduction in the sucrose content of the juice of the susceptible varieties by about 25 percent the amount of loss being dependent on the variety and on the time during the growing season that the stalks become infected.

Control Measures.

(a) Make frequent observations of the crop and rogue out ruthlessly any case of Red Rot as early as possible to eliminate the chances of secondary infections. (b)Sugarcane should not be planted in low lying fields as water from neighbouring fields may bring infection. (c) Cut ends of the setts to be planted should be carefully examined. Any sett, showing even a trace of reddening, should be rejected outright. (d) The field for planting should be free from Red Rot infection. (e) Burn all the trash and cane stubbles of the previous crop left in the field after harvesting. (f) Plough the fields before the hot season and thus the fungus will get exposed to the Sun. (g) Sow sugarcane after three years in the field suffering from Red Rot. (h) Susceptible varieties in the affected areas should never be ratooned. (i) Seed material should not be obtained from the diseased fields.

one of the principal methods of controlling Red Rot is to use sound healthy setts. If they are sown in plots where long rotations are practiced, there is a little likelihood of an epidemic. Destruction of trash and other diseased material, sound cultural practices and avoiding covering seed setts too deeply, are excellent means of reducing infection.

A high power Red Rot committee has been recently set up by the Indian Sugarcane Committee. The Mycological Sub-Committee has suggested suitable schedules for the Anti-Red Rot Campaign to be launched in the badly affected areas of Uttar Pradesh, Bihar and Punjab. The operational steps in the Campaign for controlling Red Rot in seriously affected areas are given below:—

October

(1) A rapid survey of the Unit to mark out all affected and suspected cane fields and arrange for their crushing as early as possible when the Mills start. These fields should be ploughed up immediately after harvest and the stubbles and trash removed and burnt.

It is appreciated that this would involve very heavy work, but keeping in view the incidence, a number of men would have to be made available for the purpose with the help of Cane Development Department, Sugar Factories etc. The task, however, may not prove so heavy as, when once a field is suspected to be infected, it need not be surveyed any further because it shows that the crop is infected and has to go in for early crushing. A more rigorous examination and survey of that field would be essential which is apparently free from infection and is proposed to be retained for seed purposes.

When the survey is completed it would be for the staff concerned to decide as to which area will be ready for first crushing. The area most affected will go in first. The gradation and priority would be laid down by the States concerned.

It is considered necessary that this work would be completed before the next planting season in each case.

Marking out Red Rot free fields, select the best available and reserve them for seed purposes at the rate of 15 to 20 acres for every 100 acres to be planted depending on incidence and spread of infection in the locality.

November, December & January

3. Frequent inspection of the selected fields and rigorous roguing out of any suspected cases of Red Rot, as also Smut. (Removal of the entire clumps and not merely the individual affected shoots).

Any selected field in which the Red Rot incidence exceeds 0.1 % will be discarded. Further, it is intended to gradually replace the affected varieties with more resistant ones, but as that would take time, as an immediate measure, this step has to be followed for seed plots.

January

4. Checking up of these seed cane plots for definite freedom from Red Rot infection by randomised sampling of the crop for nodal infection (100 canes per acre; not more than one cane from each clump; the canes, after examination, to be sent on to the Mill for crushing). Sampling method to be ascertained from the statistician.

February

5. Distribution of the seed cane material from these selected plots to the cane growers through the Mill or the Cane Co-operative Societies on "Purzi" basis. A track of the material supplied to be kept and the resulting crop to be watched for freedom from the primary type of Red Rot infection.

6. Rigorous seed selection of seed canes and setts to be planted. Fungicidal seed dressing of setts with Aretan (in-and-out dip) or Agallol for general protection of setts against soil micro organisims and for quicker and better germination and higher yields (Gamma BHC-Aretan treatment where termite trouble is expected).

7. Freeing from Red Rot infection of the fields to be planted to cane by carefully removing all trash and cane stubbles of the previous crop left in the field after harvesting and following long rotation, and abandoning October planting in seriously-affected fields.

March–June

8. Periodic pre-monsoon inspection of the new crop and removal of affected clumps and their destruction. (Entire clumps and not merely the affected shoots to be removed.

July and August

9. Protection against rain water or irrigation water reaching the seed crop after flowing through neighbouring Red Rot affected fields by constructing suitable bunds and channels in and around the fields. Efforts will be made to clip off and destroy the leaves showing mid rib lesions.

September and October

10. Periodic post-monsoon inspection of the crop and removal of affected clump (Entire clumps) from the fields as early as possible and their destruction. In the event of heavy Red Rot infection, cutting and crushing of the crop as early as possible to avoid further spread of the disease, as also ploughing up of the fields and removal and destruction of the stubbles and trash and all dried up canes left in the fields at the time of harvest.

There should be strict control against the use of seed cane material from Red Rot affected fields.

11. Banning of ratoons in the area.

12. Banning of cultivation of cane varieties known to be highly susceptible to Red Rot in the area.

13. Replacement of the affected varieties in the area as quickly as possible with such cane varieties as are fairly resistant to Red Rot, even though these may be slightly inferior in yield performance.

14. Seed Nurseries to ensure supply of disease free seed of Red-Rot resistant cane varieties to every cane grower. Seed Nurseries to be established on suitable sites and if necessary even at some distance to minimize chances of secondary infection.

IMPROVED RICE STRAINS IN MADRAS

FRANCIS V. THADIKARAN

RICE *Oryza Sativa* is the most important food crop in Madras as also in India. The acreage under rice in India is 75.13 million acres with an average production of 23.15 million tons at an average yield of 746 lbs. per acre. The corresponding figures for Madras are 5.95 million acres, 2.49 million tons and 937 lbs. Among the countries of the world the highest yields are recorded by Spain, Italy, Japan and Egypt, the produce per acre being 3234 lbs., 3105 lbs, 2251 lbs. and 2062 lbs. respectively. Among the states in India, Andhra leads the others with an average yield of 1076 lbs. per acre.

At present over 90 percent of world's rice is grown in Monsoon Asia. Eventhough India occupies a unique position among the rice-producing countries, with nearly 38.7 percent of world rice acreage (excluding U. S. S. R. and China) and contributing 32 percent in respect of production, her agriculture is not free from the controlling grip of the monsoon which decides the profitability of agriculture. Natural calamities are of everyday occurance and in many places floods follow draughts and incalculable damage is caused by pests and diseases. Therefore, the evolving of improved strains, especially those which are draught resistant, for water is the limiting factor in many places, are of supreme importance.

Of the 7000 botanical varieties of rice known in the world, 4000 have been identified in India, and that in evolving improved strains of rice Madras is undoubtedly one of the leading States. The improved varieties evolved by the Agricultural Research Stations in the State can be grouped as follows: Co 1 to Co 23,

G. E. B. 24, and Co 25 to Co 28; Adt 1 to Adt 25; Ptb 1 to Ptb 32; ASD 1 to ASD 11: TKM 1 to TKM 6; WND 1 and WND 2; MGL 1 and MGL 2; Palur 1 and Palur 2.

The Agricultural Department is suggesting particular strains for particular areas with different climatic conditions so as to overcome the drawbacks which make our agricultural yields low and uncertain. The Department recommends for most parts of the State the variety Co 13 at a low seed-rate of 40 lbs., (the present seed-rate followed by the ryots is 100 lbs). which is a selection from *Arupatham Kodai* for autumn-spring to be cultivated in June and February and harvested in September and April. It takes 110 days and yields 3000 lbs. per acre. This is found most suited for the *Swarnavari* season.

Among the other varieties Co 14 (Hybrid. Co 3 x. Burma variety), Adt 17 (*Mutnusamba*), Ptb 15 (*Kavunginpoothala*), and ASD 10 (Pure Line) stand submersion, whereas strains like 9 Co 17 *Vadan Samba*) and Ptb 7 (*Parambavattan*) resist draught and are with stiff straw and bunched earheads. Of the strains evolved at Combatore, Co 20 (*Tella Sannavadlu*) quickly responds to manuring. Regarding the time taken by the crops for maturity, Adt 3 Adt 4 (*Kuruvai*) and pure line varieties such as Ptb 29, Ptb30, ASD 8 and ASD 9 are short duration crops requiring only less than 100 days, while Adt 6 and Adt 7 (220 days), Co 19 (210 days), Co 4, Co 8, Co 12, Co 14, Co 15, Co 16, Co, 17, Co, 18, Co 19 and Co 26 (200 days) are long-duration crops. Adt 12 (Selection from *Chitrakali*) and Ptb7 are well suited for cultivation in areas of uncertain rainfall because they successfully withstand irregular water supply. Varieties such as Ptb 9 (Selection from *Thavalannan) and Co* 4 (Selection from (*Anaikomban*) are non-shedding and non-lodging and are fit to be cultivated more thickly with heavy manuring) TKM 5(Selection from *Manakkattai*) and TKM 6 (Hybrid, Co. 18 x GEB. 24) both cultivated as *Swarnavari* and *Navarai* are fine-grained; but TKM 5 grows in all kinds of soil being a robust variety. The highest per acre yields are claimed for Co 1, Co 2, Co 3, Co 4, Co 5, Co 6, Adt 9, Adt 10, Adt 14, Adt 20 and ASD 1 which give yields from 3500 to 5000 lbs. But due to unfavourable weather conditions the maximum yields are not attained in many areas.

Among the strains that can withstand pests and diseases, the following may be mentioned: Co 1 which is a natural cross frow GEB 24 (hybrid) highly resists stem borer; Co 4 resists *Pericukaria Oryzea*; Co 15 (Hybrid, GEB 24 x Adt 10) and Co 19 (Selected from *Sirumani*) are resistant to *Pericularia.* The important *Blast*-resistant varieties Co 25 and Co 26 are of Hybrid origin. Among the high quality strains mention may be made of GEB 24, TKM 6 and Ptb 20 which are of high yielding capacity and adaptability to a wide range of cropping conditions.

Most of these improved strains have been evolved by selection from natural populations. From Madras, 113 improved varieties suitable for different soils, rainfall, topographical and climatic conditions have been released. Of these, 103 have been evolved by selection and 10 by hybridization. On an average these strains give 15 to 20 percent increase in yield over local varieties, and are distributed according to agricultural regions; they are Adt 1 to Adt 25 for the deltaic areas of the Cauvery river; TKM 1 to TKM 6 and palur 1 and palur 2 for East Coast and North-east region; Co 1 to Co 23, GEB 24, Co 25 to Co 28, and ASD 1 to ASD 11 for central and southern region and, Ptb 1 to Ptb 32,

MGL 1 to MGL 6 and WND 1 and WND 2 for the West Coast region of heavy rainfall.

The Agricultural Department is trying to popularise these improved strains through the District Agricultural officers and Agricultural Demonstrators all over the State. But in many places the work has been slackened and the ryot is unable to get good seeds, adequate manure, and proper advice in time, without which no scientific culture is possible. This urgently calls for a tuning up of the whole set up. Evolving strain after strain in Research Stations will not make agriculture progressive unless it is popularised among the farmers through healthy propaganda and effective demonstration. If this is done, we can foresee our agriculture marching forward towards an epoch of great splendour.

YOUNG INDIAN FIGHTS INSECTS ON U. S. LINES

By : **K. V. SUBBA RAO**

TO the sixty-six percent of Indians who depend on land for their livelihood, the many problems are : Floods, drought and insects.

The first two are tackled by building huge reservoirs across rivers, and water thus stored pass through canals to the needy lands. The success of the Second Five Year Plan depends on intensive food production.

From the dawn of Man, the insects have been a menace. Man still wages a chemical warfare with modern techniques that the arsenal of science is providing.

In this context, the two, year visit by 25 year old V. Ravindranath to the United States is significant. Not only is he interested in this problem, but he would like to incorporate the new techniques in the production of the insecticides. Mr. Ravindranath heads the Mysore Insecticides Company, a leading pesticide manufacturers in South India.

Mr. Ravindranath after obtaining his bachelors degree from the Presidency College in 1955, left for the United States in 1956. He studied Economic Entomology for a year at the Cornell University. He took another year of practical training in 'insecticides formulations' with leading firm in USA—Stauffer Chemical Company, Bayome, New Jersey.

He is interested to use his new found knowledge to the best advantage of the country. Asked whether his field is limited in India, he said: "In my field it is not possible to compare with other countries. United States is the only country where many millions of dollars are spent on research in the development of insecticides."

"It takes long time to educate the poor and illiterate farmer, since most of the newer insecticides are very poisonous. But the farmers are giving keen attention to the newer insecticides, and with the help of the government it is possible to implement the newer techniques."

To a question whether the Indian Farmer would accept insecticides to the age old manures, Ravindranath was positive when he said: "Yes. Nearly 45% of the farmers accept it. I am quite sure that when we educate them, every farmer will surely agree to it."

The Mysore Insecticides Company formulated materials based on BHC, DDT, Lindane, Endrin, Heptachlor, Aldrin, Dieldrin and many others. These powerful insecticides promise the Indian farmer a better way to tackle the pests, and raise a good crop.

To Mr. Ravindranath who looks to the future of India with a promise, he believes that India would grow economically to the stature of the United States.

NOTES ON INDIAN WEEDS

JHARBERI (*Zizyphus rotundifolia* Lamk)—A Dryland Weed

By : **P. M. SANGAL.**

Synonyms :—

Z. mummalaria W. and A.; *Z. microphylla* Roxb. ; *Z. lotus* Lamk ; *Rhamnus mummalaria Burm.*

Vernacular Names :—

Its Sanskrit name *Ajapriya* or *Bhukantak*. It is called by different names in different localities e.g. *Jharberi*, *Jand* or *Kantaber* in Bundelkhand ; *Malla-ber Birar*, *Jhari*, *Jharberi*, *Kanta*, or *Jand* in N. W. India, *Gangr*, *Beyr*, *Jangra*, *Nando-Jangro* in Sind ; *Berota*, *Jerberi*, *Mallar-ber*, *Jand*, *Ber*, *Birar*, *Malla*, *Kokniber*, *Pata*, or *Jhar-Pata* in Punjab; *Ber*, *Bhor*, or Jalbhor in Rajasthan ; and so on.

Distribution and Habitat :—

Z. rotundifolia, a member of Natural Order *Rhamnae*, is a native of N. W. India and is also found in western region, in outer Himalyas and in drier parts of South India above the Ghats. It covers vast areas in Punjab, Gujarat, Rajasthan and Bombay, where it is sometimes very troublesome. This weed is widespread abundant and often gregarious in dry waste lands and cultivated fields of Doab and in ravine tracts of Jamuna and Chambal rivers.

The plant is extremely xerophytic and flourishes in driest zones, but is absent from moist regions. It thrives quite well in uncultivated waste lands, sandy slopes, cultivated fields, ravines and eroded lands, field bunds and embankments, hilly areas etc. It does not grow on very high elevations and has been reported to flourish upto 3500ft. above sea level.

Habit

It is a small thorny, tomentose, dumose, perennial, evergreen shrub, branched from near the roots, forming low spreading heavily armed, straggling dense thickets. Height is mostly 2–3 ft; rarely 6–8 ft. It is found all the year round but is quite vigorous during summers due to its highly xerophytic habit.

Morphological Characters

Stem :—Partly underground and partly aerial. Under ground stem is a strong, woody rhizome. Aerial stem branched profusely near the base with zigzag, slender, bifarous flexuous branches. There is hardly any main stem.

Leaves :—Simple, petiolate, alternate, round or oval, distichous, finely serrate, sometimes mucronate, green above and felted below with a velvety, whitish or buff tomentum, less densely tomentose above. Basal veins 3 joined by a few more on the under surface. Stipuled modified as spines—one straight slender, finely pointed about as long as the leaf and the other much shorter and hooked.

Inflorescence :—Short compact, auxiliary, sessile, pubscent cyme, under ½" in diameter, consisting of 10–15 flowers.

Flowers:—Small, greenish yellow, complete, bisexual, hypogymous. Floral formula U, K, C, A, G (2).
+ 5 5 5 —
calyx pubescent, lobed into triangular lobes and keeled on the inner face. Petals spathulate, expanding to a broad, obovate, concave or flat lamina ; margins convolute or inflexed. Filaments deflexed together with enclosing petals. Disk 10 lobed with a pit opposite each lobe.

Fruit :—A red, globose, glabrous, woody, edibile drupe about the size of pea or a bit larger.

Seed :—Rugoes, 2 celled, with a hard shell, Exalbuminous, dicot.

Propagation and Mode of Spread :—

Propagation of this weed is through seeds and under ground rhizomes. Fruits ripen in winter and are beaten off the bush for their sweet flesh. The seeds are thrown here and there and are often distributed over long distances in this way.

The other method of propagation causes greater infestation of the weed in a given area. Parts of underground rhizomes are broken from the mother plant and are taken from one corner of the field to the other and sometimes from field to field through cultivation implements. Thus new plants grow up under favourable conditions from these bits.